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DEFICIENCIES IN OUR METHODS FOR THE TREATMENT OF CHRONIC NEPHRITIS

NEED FOR INVESTIGATION *

HENRY A. CHRISTIAN, M.D.

BOSTON

In considering the best methods for the treatment of chronic nephritis (Bright's disease) we labor under the disadvantage of dealing with a disease regarding which there are many gaps in our knowledge. Of its etiology we know surprisingly little in any exact sense, though the view is receiving increasing support that many of the cases have their primal cause in an infection of bacterial nature, most frequently of the streptococcus group. Even granted, however, that organisms of the streptococcus group originate the renal disturbance, we are not helped much in the matter of treatment, because, in case of the known nonrenal streptococcus lesions, we are able to treat only by elimination or drainage of a focus of infection, and can do little, if anything, toward counteracting the toxic substances that are produced and distributed to the body organs. If actually resulting from an infection, the chronic renal lesion presents itself months or years afterward, too late to be helped much by removal of the focus of infection even if still present. In other words, in the earlier, easily treated stages of the infection, the infection may pass unrecognized; or, what happens more frequently, there is nothing to indicate the beginning of a lesion in the kidney which slowly and gradually will develop into a recognizable nephritis. In the later stages when the renal lesion is easily recognized, the focus is no longer existent, or if present, its removal can change but little the renal damage already done. I have been very much struck, in my own experience, with the relatively few cases of chronic nephritis that seem to have been a direct sequence to a demonstrated infection or infectious disease; most of these have belonged to a rather distinctive group of cases, progressing rapidly to a fatal issue and perhaps better thought of as subacute than chronic nephritis. In these none of the methods of treatment seem to have had the slightest effect on the course of the disease; that is to say, knowledge of a close association with an infection, so far, in this group, has not shown the way to a successful treatment.

As to the actual type of lesion developing in the kidney, we know very little while the disease is progressing. Clinical classification cannot be accurately correlated with structural classification, and there are so many gaps in our knowledge of the pathologic lesion in the kidney, particularly in regard to its histogenesis and its effect on function, that a structural consideration of renal lesions helps but little in treatment. During life, anatomic diagnosis in any narrow sense is almost impossible and even when successfully made helps but little in treatment.

In many of the patients with chronic nephritis there are coincident vascular lesions, in the main of degenerative nature; but of these we know as little as of the renal disturbances, so that their presence merely handicaps us all the more in applying a rational treatment.

In recent years, much attention has been given to the study of renal function in nephritis, and we have learned may facts in regard to it. The question naturally arises: How much has this newer knowledge of renal function aided us toward a more satisfactory method of treating these patients?

Except for the removal of recognized foci of infection and as prompt and efficient treatment as is possible of all acute infections, we at present can do practically nothing for the prevention of nephritis. Preventive treatment in a practical sense is almost nil for chronic nephritis, and will remain so until we learn more of the etiology and particularly of the factors that influence the progressive development of renal lesions.

THE AIMS IN THE TREATMENT OF CHRONIC NEPHRITIS

As we treat the chronic nephritic today, we aim (1) to stay the progress of the lesion; (2) to remove edema if present to an annoying degree, and (3) to prevent the formation and combat the effects of toxic substances, the result of the presence of the renal lesion. Let us briefly take stock of these methods and the knowledge on which they are founded.

1. *To Stay the Progress of the Lesion.*—With this in view we make two points of attack: (*a*) We remove foci of infection and guard against repetition of infections, and (*b*) we attempt to give the renal tissue as much of a chance as possible for recuperation by reducing its work, largely by limitations of diet.

(*a*) As already intimated, frequently we discover no focus of infection; and when we find one its removal usually accomplishes little, for the damage to the kidney has been done and we do not know how to increase renal repair. Yet it remains rational to seek for and remove, so far as is possible, foci of infection when found; we must not, however, promise the patient any striking result from such treatment, though occasionally great improvement may result. To guard against repetitions of infection, we urge the avoidance of exposure to contagious diseases and the reduction of contacts with infection. For a better

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resistance we urge the best possible hygiene, but these are all very general directions in very general terms; they are easy to state in a general way but difficult to carry out.

(*b*) To decrease renal work we limit diet. The kidney is an excretory organ concerned in the elimination from the body of water, salts, and nitrogenous and other substances; some well understood, others, such as various toxic substances believed to be eliminated by the kidneys, little understood. We assume that by limiting the intake of food and fluid we decrease the work of the kidney and give the kidney physiologic rest and so opportunity for repair. The tendency today is to decrease fluid intake, especially water. What is the basis for this? We have evidence that water excretion causes renal work, and to an injured kidney an increased fluid intake can lead to a decreased output of urine. When edema is present, we can see it increase as fluid intake increases. We also know that there is a limit to the reduction of water intake below which it is injurious to go because of the concentration of other substances to be excreted which is incident to great water restriction. Very likely, too, a much decreased fluid intake will cause injury to renal cells. Consequently, it seems reasonable to assume that there is an optimum mean of water intake. Do we really know this mean? I think not, except in the sense of the effect of fluid limitations over rather short periods; and even here, knowledge is imperfect. There has been surprisingly little critical study of the effects of different water intakes, especially over long periods of time. What we need to know is the comparative effect of a water intake at a level of 1,000, 1,500, 2,000, 2,500, etc., c.c. for weeks and months in comparable cases. Until these observations have been made, much of the value of a prescribed water intake in influencing the course of nephritis must remain guesswork. Again, we are by no means sure that increased water intake is harmful in all types of nephritis. Just what has been said of water applies to food constituents. Salt intake, protein intake, the problem of an adequate diet in the newer sense, all need to be studied over prolonged periods. If we find that nitrogen elimination is decreased and there is nitrogen increase in the blood in the form of urea, uric acid, etc., we decrease protein intake, often with prompt improvement; but this condition of evident disturbance in nitrogen metabolism really comes late in nephritis. We need to know the optimum protein intake for the early stages, if we are to help matters. War conditions have shown that prolonged reduction of protein intake with a probable imbalance in amino-acid constituents is harmful. Excessive protein intake in the later stages is often observed to be harmful. Between these two extremes there are great gaps in our knowledge at present, and what the optimum intake over a long period of time should be with a mildly damaged kidney, we need to know.

So for salts, of which sodium chlorid almost alone has been studied and that only over relatively short periods of time. I want to impress on you that as to water, salt and protein intake, which we reduce with the idea of affording the kidney rest, and this seems to be sound in principle, we lack the knowledge as to what amount of each in combination is best for the developing nephritis in the sense of reducing renal work without causing other damage, and so affording a physiologic rest that will give the kidney the best opportunity to repair its damage. This information apparently can be obtained by a thorough, careful study of a large group of patients, followed over a period of not less than five years, to whom we apply a considerable number of the methods of studying renal function at present available; and this surely should be done to give us a better basis for the dieting of patients with nephritis.

Apart from the various constituents of food, should the calory value of the intake in the nephritic be reduced to a level that will cause a loss of body weight, or should body weight remain in equilibrium? In diabetes, evidence seems to favor a lowered level of body weight. In the latter stages of both diabetes and nephritis there is a marked loss in body weight which cannot be made up by an increased calory intake. As to whether a lower level of body weight in the earlier stages of nephritis would be beneficial, we do not know. Careful observation here is almost lacking.

Muscle exertion increases substances to be eliminated by the kidney. Excessive muscular effort appears to lead to renal irritation. Too little exercise lowers the general efficiency of the body. We need to advise our patients with early nephritis in regard to exercise, yet we have few data on which to base our advice. Still, data would be obtainable if an adequate investigation of the effects of varying sorts and degrees of exercise repeated daily for a period of time should be undertaken.

2. *To Remove Edema.*—For this purpose we restrict salt and fluid intake and increase elimination. If we are to deal satisfactorily with edema we should know why the edema is produced. In some patients, apparently few in number, sodium chlorid retention in the body seems to be a very important causative factor in the edema. If salt retention is due to defective renal elimination, in such cases restriction in the salt intake frequently leads to disappearance of the edema. Whether or not this occurs seems to depend on whether, with a lowered intake, there is some excess excretion representing sodium chlorid taken from body stores. In ratio to this excess excretion, accumulated water leaves the body and edema decreases. With the reduction in salt intake, fluid intake too should be reduced to facilitate loss of fluid from the body. To reduce fluid and salt intake is evidently a rational procedure for patients with edema when we have evidence of faulty elimination of one or both. Unfortunately, however, in some cases water and salt excretion by the kidney is at such a low level that we are unable so to reduce intake as to bring about an elimination in excess of intake, and therefore our restrictive measures are ineffective. Fixation of salt and water by body tissues may play a part in causing edema. In many patients with edema we find a very poor salt elimination, and usually a decrease in fluid elimination. So far as can be detected, there is no considerable increase in salt and water in the vascular area as determined by analysis of the blood. In some of these patients a large part of the ingested salt, not excreted by the kidney, is found in such accumulations of fluid as ascites. We know that protoplasm contains both salt and water. Are these amounts, under certain conditions, increased in some way, more of these substances being incorporated or fixed in body cells? This is a phase of the subject, a biophysical one, about which we have little knowledge at present. There is much evidence that edema is by no means a simple question of salt and water retention

by reason of fault in the kidney. Certain edemas in which there is no evidence of renal lesion are proof of this. Anyhow, in actual practice, salt reduction and fluid restriction often fail to decrease the edema of chronic nephritis.

Another view has been expressed that in the edematous nephritic, blood proteins, mainly albumin, are decreased, and this decreases osmotic pressure to be exerted on the filtration membrane of the glomerulus and so increases water retention. To correct this, protein-rich feeding with high carbohydrate intake is advised. In my own trials such treatment has been ineffectual, and several observers fail to find evidence of decreased blood proteins. It would seem for both reasons that this is a factor in the edema in few cases. Usually protein-low feeding is advised on the basis of the principle of securing physiologic rest already referred to.

Another view of the causation of edema attributes it to swelling of colloids on account of increased acidity and variations in salt content. Alkalis are given on this basis; in my hands this treatment has been ineffectual and seems to be harmful.

Other theories as to the causation of edema do not lend themselves to therapeutic application. The entire question of the causation of edema needs thorough study; little is really known about it.

Failing to influence the edema by means planned to change conditions leading to its formation, we are forced to rely on increasing fluid elimination while restricting fluid intake. Naturally, the attempt is made to increase renal elimination by prodding the kidney to do more work; that is, diuretics are used. In edema of nephritis they are almost invariably ineffectual, and often are harmful. In circulatory edema they strikingly increase the excretion of urine, and in mixed circulatory and renal edema they may help. In my own experience I have never seen effective diuresis from a diuretic when the basis of the edema was a renal lesion. They may be tried cautiously, because one cannot be sure of the absence in a given case of a circulatory element in the edema responsive to diuretics, and perhaps there are cases with renal edema which may respond to a diuretic.

Fluid elimination can be brought about through skin and intestine, and sweating and catharsis will increase elimination of water. Unfortunately, they are processes that cannot be repeated very frequently (more than daily); they are debilitating at best, and progress by means of them is rather slow, even when it is obtained.

Mechanical removal of fluid can be carried out, and it always gives temporary relief; rarely is it of permanent help.

3. *To Prevent the Formaton of Toxic Products and to Combat Their Effects.*—What causes uremia we do not know. It is a purely hypothetic toxic substance whose formation we seek to prevent or whose elimination we try to bring about. High protein feeding directly or indirectly frequently seems to precipitate toxic manifestations. Conversely low protein feeding should retard or prevent the formation of these toxic substances. We have evidence that it so works; therefore this type of nephritic (usually the nonedematous type), with reason, has a restricted protein diet prescribed. If these toxic substances are formed, we know of no way of neutralizing them; we can only seek to eliminate them. This we attempt by diuresis if possible, by catharsis and by diaphoresis; the last two are the most effective means. With these we combine an increased fluid intake. Mechanical removal by bleeding is the promptest and most effectual means at hand. With bleeding, transfusion of normal blood is indicated in the anemic or when repeated bleeding is required.

In this review of the treatment of nephritis I have stressed the gaps in our knowledge with the idea of emphasizing the importance of further investigation of the problem of nephritis. Methods of treatment that we use are largely empiric; to recognize this fact is more conducive to investigation than if we assumed that treatment was on a rational basis. Notwithstanding the many deficiencies in our knowledge, we are able to do much to improve the condition of the nephritic, and probably we can retard the progress of the lesion which we cannot cure.

SUMMARY

Deficiencies in knowledge as to the etiology and pathology of chronic nephritis and associated vascular lesions handicap our treatment. Treatment is largely symptomatic and based on such knowledge as we possess of renal function. Preventive treatment is very unsatisfactory. In treating chronic nephritis we aim: (1) to stay the progress of the lesion; (2) to remove edema, and (3) to prevent the formation and combat the effects of toxic substances. To stay the progress, we seek to prevent infections, and by dietary restrictions to decrease renal work and so afford physiologic rest and opportunity for repair. The latter seems a rational procedure, but we need much knowledge for a basis of determining the optimum for a prolonged intake of water, salt and protein. To remove edema, we restrict salt and fluid intake and increase elimination; but we know very little as to the cause of edema, and hence are handicapped in treatment. Increased elimination by diuretics rarely succeeds when a renal lesion causes edema. Elimination by sweating and catharsis is slow, but may succeed. Mechanical removal is effectual, but temporary. To prevent toxic manifestations, we reduce protein intake; to combat them, we increase elimination by diuresis, diaphoresis, catharsis and bleeding. Bleeding is the promptest and most effectual method of elimination of toxic substances.

Peter Bent Brigham Hospital.

ABSTRACT OF DISCUSSION

DR. LEWELLYS F. BARKER, Baltimore: Dr. Christian distinguishes three main types: acute nephritis, the less acute or subchronic form with edema, and the chronic forms that go on for a long time without edema, though they sometimes develop a terminal edema from circulatory lesions. These groups correspond closely to the three generally described as acute diffuse nephritis, subacute or subchronic glomerular renal disease, and hypertension renal disease without edema, known as interstitial nephritis and as the arteriosclerotic kidney. I do not use the term interstitial nephritis unless confronted with an inflammatory condition. Ordinarily, I prefer the term nephropathy. The etiology of these diseases is not clear. Acute nephritis and acute inflammations are doubtless often toxic in origin and very often streptococci are responsible, especially for the subacute or subchronic glomerular tubular forms with dropsy and with edema. The cause of most chronic forms without edema is hypertension. We know less about these forms as far as etiology is concerned. Probably when we know the etiology of hypertension and of arteriosclerosis, we will be more familiar with the etiology of the chronic types. Obesity, hyperthyroidism and slight

infections occurring over and over again may be responsible. As to therapy: In focal diseases without any loss of renal tension, the therapy is simple, but in diffuse lesions with disturbance of the water output, with changes in or near the cardia, disturbance of the nitrogen output and the toxemia that seems to be associated with nitrogen retention, therapy is not so simple. Once nephritis in chronic form has occurred it is impossible to remove it. In the acute forms complete recovery sometimes occurs. Chronic renal disease with hypertension may go on for ten or twenty years and death finally occurs from uremia or myocardial insufficiency. As to the methods of protecting the kidney: The two principles followed are protection of the kidney and support of the heart and circulation. Protection of the kidney is most important in the first two groups and support of the heart is most important in the third group. The three dietetic regimens used are, first, water and milk, or a milk regimen; second, the chlorid-free regimen, and third, the nitrogen-free regimen. In any case of renal deficiency often only water, a wineglassful every hour, will do good. The patient will suffer no harm by going without food for a few days. Often uremia and marked Cheyne-Stokes breathing will disappear under water regimen. Then give equal parts of water and milk, and finally, milk, but warning against a long continuance of such a regimen. To keep patients on nothing but milk for months is a mistake, since milk alone cannot support the patient properly. There is not enough iron in milk, and it is well to give iron in some form, such as Basham's mixture.

The indication for the chlorin-poor method is water retention with dropsy. In some cases this diet does get rid of the edema, but do not give a chlorin-free diet for too long a period. Give a chlorin-poor rather than a chlorin-free diet. Milk is not chlorin-free, but a pure vegetable diet is more nearly so. Chlorin-poor diet is so unpalatable that patients use pepper and mustard to flavor it. These substances are sometimes irritating to the kidney, and following large intakes of mustard many patients have developed gastric ulcer and hematemesis. The reduction of nitrogenous substances produces good results in the early stages but cannot be continued too long. It is important to keep the intestinal tract freely open by salines and to keep the skin moist. At the same time, avoid prolonged catharsis. Venesection is the quickest way of relieving uremia; often the withdrawal of from 300 to 600 c.c. of blood without any other measures will prove of value.

Some diuretics, such as theobromin sodium salicylate and theocin, may injure the kidney cells. I never give theobromin sodium salicylate for more than three days at a time or theocin for more than two days. The effects of these drugs are much more marked in the edemas due to myocardial insufficiency than to renal insufficiency. Squill also has some effect, but aside from theobromin sodium salicylate and theocin, diuretics do very little good. Support of the heart is important in the subacute cases with edema. Rest in bed with digitalis or strophanthus, reduction of the fluid intake to 500 c.c., five small meals, and laxatives, are the things that restore the heart muscle and circulation through the kidney. Prophylaxis is what we should preach. If we keep every patient with an acute tonsillitis in bed until the throat is well, if we take care of every acute infection by rest in bed, if we get rid of abscessed teeth and other focal infections before damage is done, if we keep patients from being 40 or 50 pounds overweight, if patients will have their family doctor examine them while they are well rather than wait until they are ill, we will accomplish more of what we desire.

DR. GEORGE DOCK, St. Louis: I do not think any advance has been made in our knowledge of kidney disease by trying to substitute the term nephropathy for nephritis. Some of the most typical cases of acute kidney disease are degenerative rather than inflammatory, hence the suffix "itis" cannot be limited to inflammatory processes. Nephritis can be translated "kidney trouble" rather than kidney inflammation. But kidney trouble is the same as nephropathy or nephrosis, and so nephritis is as accurate as any other term so far proposed. At the time the early classifications of kidney disease were made, function was practically unknown. We have learned much about kidney function, but we have not translated kidney function into pathologic anatomy. There is much to learn. Dr. W. H. Olmsted has been working on a novel method, and with promising results. It consists, briefly, in letting the patient starve over night, examining the urine in concentrated form for the most important chemical constituents, then letting the patient drink large quantities of water (several liters), and then making a new series of chemical tests. I agree with Dr. Barker as to the preventive treatment of chronic nephritis. Osler called attention to the advantage of finding a small amount of albumin in the urine because the patient can be told that he has nephritis and his life be regulated so as not to be cut as short by the disease as it would be if he had no treatment. Often patients are given a bad prognosis because they have chronic Bright's disease and they live accordingly. Important points in practice are: Put the patient on a low calory diet early. A milk diet is fairly safe. Eggs are also good food in nephritic cases. Calcium, iron, bread and vegetables should be included in the diet. I prefer a salt free diet, because so many people do better with little salt. Some patients do better with red meat; some do better without meat, especially chronic cases of low grade without serious cardiac degeneration. I agree entirely with what has been said about diuretics. Exercise is important for these patients but it must be exercise suited to their condition. Chronic nephritis patients must be taught how to live.

DR. NELSON W. JANNEY, Santa Barbara, Calif.: There is still an overgreat tendency to overemphasize protein restriction in nephritics. One reason for this is the many laboratory investigations dealing with proteins, protein production, blood urea, etc., which has emphasized, perhaps too greatly, this phase of treatment. I have become accustomed to see nephritics in not a particularly favorable condition so far as the dietetic side of the treatment is concerned because of the low protein intake for a long period. Those patients are frequently rather weak and obese because the average man will make up promptly in fats and carbohydrates for what he is prevented from taking in the way of protein food. Obesity must be avoided in nephritis. The obese nephritic is usually weak and neurasthenic. Some of these patients are taking as low as 30 or 40 gm. of protein over long periods and really suffering protein starvation. Cutting down the fats and increasing the proteins help considerably. As regards the minimum protein requirement, Sherman allows 0.737 kg. of body weight. Many of these patients are given one fourth of that amount over long periods. When our knowledge of thyroid function increases, many patients with latent nephritis will be cured by treating the hypothyroidism. As in the treatment of diabetes we need a standardized dietary chart to record all data as to tests, etc. The correlation of treatment and the time period could then be worked out, in a much more satisfactory condition.

DR. EUGENE S. KILGORE, San Francisco: So long as we remain ignorant of the etiology of chronic nephritis it will be necessary to keep under suspicion a number of chemical substances used as medicines and food preservatives. Experience in investigating the effects on the kidneys of certain food preservatives has convinced me that such investigations as were possible heretofore are not decisive even if they fail to show kidney damage. It is possible that such substances may be injurious only when they have been administered over a very long time or only when in conjunction with an infectious or other agent. Still more suspicion must be attached to substances known to produce definite signs of kidney irritation. I refer particularly to the salicylates, which Hanzlik and his associates have shown to be followed quite regularly by the appearance of blood in the urine whenever the drug is given in full therapeutic doses. According to present evidence, salicylates seem to be more likely to injure the kidneys than to effect a cure. They are necessary for the relief of certain kinds of pain, but they should be used much less frequently than at present. For any other purpose than the relief of symptoms the legitimacy of their use is highly questionable.

DR. HENRY A. CHRISTIAN, Boston: I am heartily in accord with everything that has been said. I am a skeptic but not a pessimist. I have my doubts but I am not without hope. I expect to see great advances in this field. What we really need is not so many studies over a short period of time of such chronic conditions as nephritis, but studies over a long period of time. We cannot find out much about a disease that probably takes from five to twenty-five years from its inception to its end by studying it for a few days or a few weeks. We cannot find out very much about the methods of treatment unless we observe carefully the effect of remedial agents over a long period of time. What we need is combined study, because no one clinic is physically able to carry out such studies. An effort is being made through the National Research Council to carry out such a plan. That means finding the money because we have plenty of good people to carry out the work and to conduct such combined investigation over, let us say, a minimum period of five years. In regard to classification: study of a condition should be followed by simplicity rather than complexity. I sometimes take more liberties with classification than others, probably because I was trained as a pathologist who dealt with minute classifications. I think in dividing the disease clinically into acute nephritis, chronic nephritis with edema and chronic nephritis without edema, probably with the addition of a group of subacute nephritis, we have gone as far as we should in classification at present. A more satisfactory classification can come only from a more complete knowledge of nephritis clinically, etiologically and pathologically.

ARTERIAL HYPERTENSION ASSOCIATED WITH ENDOCRINE DYSCRASIA *

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The purport of this paper is to offer additional evidence to the recent literature in which attempts have been made to associate a certain selected group of cases of arterial hypertension with disturbed internal secretions. In doing this the burden of proof is, first, to establish the existence of positive endocrine states in these cases; and, second, definitely to exclude the presence of a possible vasculorenal or other lesion as the cause of the arterial hypertension. With a few exceptions, the negative diagnosis of cardiovasculorenal lesions in the cases here reported was based on the absence of present-day clinical manifestations and the course of the disease. The diagnoses of different endocrine dyscrasias were based on clinical evidence considered sufficient for the demonstration of positive endocrine disease, plus the exclusion of other possible diseases as a cause for the symptomatology. The personal observations here reported were deduced from an analysis of 500 uncomplicated endocrine diseases, in which accurate blood pressure records and other determinations worthy of report had been made. Of these 500 patients, forty-six had a systolic pressure of 160 or above. This surprisingly high number, almost 10 per cent., was considered of sufficient clinical importance to be worthy of attention, and serves as the pretext for this paper. In a considerable number of these cases, the abnormal blood pressure had been diagnosed as being due to "neurosis," or to lesions of the renal or vascular system. Contrary to the unfavorable prognosis based on renal or vascular disease, many of these patients had lived a considerable number of years, completely disregarding their high blood pressure or other serious lesions held responsible for this sign. The treatment which had been prescribed, definitely indicated, no doubt, by the foregoing diagnosis, if in any way effective, had only served to add materially to the affliction of these patients.

In order to avoid early misconception regarding the possible relationship of endocrine states to arterial hypertension, it should be stated that there is no intention to disconnect arterial hypertension from the already well-established groups of arteriorenal lesions. The scope of this paper covers an entirely different division of cases, perhaps a small percentage of the entire number of arterial hypertonias, the clinical studies of which suggest an entirely different cause for the high blood pressure. Granted that this premise is correct, then the prognosis and treatment in these cases must, of necessity, be radically different from those that are accepted in arterial hypertension.

RELATIONSHIP OF ARTERIAL HYPOTENSION TO ENDOCRINE DISEASE

Since Addison first described epinephrin insufficiency in 1855, there has been a tendency to relate different blood pressure states to abnormal activities of the endocrine glands. The gradual decrease in blood pressure in complete insufficiency of the suprarenal glands not only attracted the attention of physiologists and clinicians (Vaquez and Aubertin,[1] Schur and Wiesel,[2] Ehrmann, Schlayer,[3] Fränkel,[4] Aschoff and Cohn,[5] Oberndorfer,[6] Stewart,[7] Ingier and Schmorl,[8] Janeway and Park[9]) to this relationship, but the trend of experimentation has been along the line of attempting to connect arterial diseases and those substances of the internal secretions which are known to influence markedly the unstriped muscle contractions producing constriction of these vessels. Allbutt [10] has described and proved the involutionary or decrescent type of arteriosclerosis in which the arterial tension gradually decreases, adding to the clinical groups of arteriosclerosis an entirely different syndrome from that in which hypertension is associated with sclerotic changes of the vascular system.

For many years the secretion from the thyroid gland has been thought to be an antagonistic hormone to epinephrin in its effect on vasoconstriction. For instance, it is thought that thyroid secretion neutralizes the effect of epinephrin on the general muscular tonus, and particularly on the vasomotor constriction of the vascular system. Mikulicz, in his description of senility, gave, as a probable cause, the early atrophy and decreased secretion of the thyroid gland and consequent withdrawal of the vasodilator neutralizing effect of this secretion on the vascular system, allowing the epinephrin secretion to exert its pressor effect uninfluenced. Many other authorities (Weber, Lorand, Ewald, Rolleston and Williams [11]) suggested insufficiency of the thyroid secretion as a possible cause for

* Read before the Section on Practice of Medicine at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Vaquez and Aubertin: Bull. et mém. Soc. méd. d. hôp. de Paris **22**: 705, 1905.
2. Schur and Wiesel: Wien. klin. Wchnschr., 1907, p. 1202.
3. Schlayer: Deutsch. med. Wchnschr., 1907, p. 1897.
4. Fränkel: Arch. f. exper. Path. u. Pharmakol. **60**, 1909.
5. Aschoff and Cohn: Verhandl. d. deutsch. path. Gesellsch., 1908, p. 131.
6. Oberndorfer: Verhandl. d. deutsch. path. Gesellsch., 1909, p. 273.
7. Stewart: J. Exper. M. **14**: 377, 1911; ibid. **15**: 547, 1912.
8. Ingier, Alexandra, and Schmorl, G.: Deutsch. Arch. f. klin. Med. **104**: 125, 1911.
9. Janeway, T. C., and Park, E. A.: J. Exper. M. **16**: 541, 1912.
10. Allbutt, T. C.: Diseases of the Arteries, Including Angina Pectoris, London, Macmillan & Co. **1**; **2**: 81, 1915.
11. Weber, Lorand, Ewald, Rolleston and Williams in Allbutt, T. C.: Diseases of the Arteries **1**: 230, 1915.

the so-called senile, involutionary or decrescent type (Allbutt) of arteriosclerosis associated with hypotension. On the other hand, Victor Horsley,[12] Rolleston,[13] and others have denied such relationship. Allbutt, in his exhaustive specialized observation on this particular type of arteriosclerosis, reports negative effects on the hypotension from thyroid therapy.

It has been generally recognized, clinically, that arteriosclerosis is a rather common accompaniment of cretinism, as well as of gout and other so-called metabolic diseases. On the other hand, the changes of the blood pressure in different cases of myxedema cannot be attributed solely to the lack of thyroid substance. If this were true, the pressure would rise in all cases, whereas it is only in a comparatively small percentage of cases that abnormal arterial tension, either increased or decreased, has been noted. Spiethoff,[14] Maire,[15] and Treves[16] found a variable blood pressure compared to the thyroid activity and other symptomatology of hyperthyroidism. Changes in the blood pressure during the climacteric have been assigned by Wilson[17] to the fact that the internal secretion from the ovary has a marked vasodilator effect on the arteries, and that consequently its absence during the menopause is a factor in the rise of the blood pressure in this peculiar group of cases. Nevertheless, the hypertension in these cases must be due to causes other than the disturbed secretion of the ovaries, otherwise, it would occur in a larger percentage of cases. The chromaffin secretion is supposed to influence the sympathetic, and not the autonomic nervous system. Other explanations (Gaskell, Cushny, Dixon and Harvey[18]) for the peculiar localized vasoconstriction effect on the vascular system have been attributed to the different amounts of epinephrin contained in the blood in different arteries of the body. Stewart[7] has proved that none of the theories mentioned above has been substantiated convincingly enough to give them consideration.

THE PATHOGENESIS OF ARTERIAL HYPERTENSION

Despite the prodigious amount of work since Traube[19] expounded his mechanical theory of renal vasoconstriction as the cause of increased blood pressure in 1856, the genesis of arterial hypertension has remained unsolved. It would not be pertinent at this time to attempt to classify the various theories assigned to this interesting sign. Suffice it to say that a great many theories have been advanced which propound other than actual organic or structural changes in the arteriorenal system as the causative factor for the high blood pressure. Those well-known structural lesions of the cardiovasculorenal system, so commonly associated with high blood pressure will be omitted from this discussion; they will be placed in a different group from those which I shall describe. The type of arterial hypertension under consideration is supposed to be entirely dissociated from vasculorenal lesions, or if such lesions, as late changes, are present, the hypertension, it is assumed, antedates them by many years. It is presumable that when such high blood pressure exists for a period of years, arteriosclerosis results as an effect (but is not the cause), and that terminal changes such as cerebral hemorrhage and cardiac insufficiency (but never uremia) may be the end-result in these cases. Considerable controversy obtained in the early literature about just such cases of arterial hypertension, and these terms were assigned by various authors to these arterial hypertonias: (1) "prealbuminuric stage of Bright's disease" (Mahomed,[20] 1879); (2) "latent sclerosis" (von Basch); (3) "presclerosis" (Huchard, 1893); (4) "essential hypertension" (Krehl,[21] and Mosenthal and Hamman[22]); (5) "hyperpiesia" (Allbutt, 1894); (6) "angiosclerosis" (Thoma); (7) "pure hypertension" (Josué and Block[23]); (8) "neurotic hypertension" (Bradford, 1898); (9) "primary cardiovascular hypertension" (Janeway,[24] 1906); (10) "benign hypertension" (Vohlhardt and Fahr), and (11) "functional hypertension" (Martinet,[25] 1912). Just what relation the diseases of the ductless glands bear to the types of hypertension just enumerated cannot be determined. It is probable, however, that a better knowledge of the diagnosis of internal secretion may reflect considerable light on the etiology of these so-called nonvasculorenal types. Should this occur, it may help to explain why a great many of the exogenous causes, such as mental strain, heredity, intoxications and infections, which have such a marked effect on the secretions of the ductless glands, have been given so constantly as etiologic factors for arterial hypertension.

It may also help to explain why obesity and other metabolic states are so frequently associated with arterial hypertension. While it is true that as yet no convincing proof has been offered, either by histopathology or physiologic chemistry, for the direct association of arterial hypertonia with endocrine dyscrasias, there is, nevertheless, increasing clinical evidence that arterial hypertension does exist in positive endocrine cases in which there is no definite manifestation of either vascular or renal disease.

INCIDENCE OF NONVASCULORENAL ARTERIAL HYPERTENSION

Janeway, after setting aside all doubtful cases, found among 130 patients with blood pressure of over 200 that no renal disorder could be detected in seventeen cases, or 13 per cent. He called these cases "primary cardiovascular hypertensions." In 100 cases of arterial hypertension studied very exhaustively by Rappleye,[26] in forty-five cases, or almost 50 per cent., there was practically negative urine, blood urea, blood nitrogen, and phenolsulphonephthalein output. In 100 cases reported by Schneider,[27] seventeen were classified as "benign" or "essential hypertension," on this basis: (1) normal vessels; (2) retention of concentrating power of the urine (Mosenthal's test); (3) normal urine, with the exception of an occasional hyaline cast and a trace of albumin; (4) phenolsulphonephthalein output normal or slightly below normal, and (5) normal blood urea and creatinin. He states, however, that, if these cases were observed long enough, from 10 to 20 per cent. would later be classed with the

12. Horsley in Allbutt: Diseases of the Arteries **1**: 230, 1915.
13. Rolleston: Clin. J., June 21, 1905; Lancet, Sept. 28, 1907.
14. Spiethoff: Zentralbl. f. inn. Med. **23**: 849, 1902.
15. Maire: Thèse de Paris, 1883.
16. Treves: Riv. iconog. d. sez. nerv. d. Policlin. gen. di Torino **1**: 2, 1897.
17. Wilson, S. A. K.: Brit. M. J. **1**: 1261 (June 14) 1913.
18. Gaskell, Cushny, Dixon and Harvey, in Allbutt: Diseases of the Arteries **1**: 228, 1915.
19. Traube: Gesammelte Beiträge **3**: 164, 235; Allbutt, T. C.: Diseases of the Arteries **1**: 7, 1915.
20. Mahomed: Guy's Hosp. Rep., 1879.
21. Krehl: Deutsch. med. Wchnschr., 1905, p. 1872.
22. Mosenthal, H. O., and Hamman: Pennsylvania M. J. **22**: 287 (Feb.) 1919.
23. Josué, O., and Block, L.: Arch. d. mal. du cœur **1**: 162 (March) 1908.
24. Janeway: Am. J. M. Sc., May, 1906.
25. Martinet: Pression artérielle et viscosité sanguine, Presse méd. **19**: 915, 1911.
26. Rappleye, W. C.: Boston M. & S. J. **179**: 441 (Oct. 3) 1918.
27. Schneider, J. P.: Journal-Lancet **38**: 247 (May 1) 1918.

malignant or nephritic groups. Of these 100 cases, 5 per cent. were grouped with the type due to endocrine dyscrasias; 3 per cent. to exophthalmic goiter; and 2 per cent. to the climacterium. An analysis of this report, based on 500 endocrine cases, demonstrates that forty-six, or nearly 10 per cent., were associated with high blood pressure. Furthermore, in a general consideration of all the cases of arterial hypertension personally observed, comparatively few have been found independent of the vasculorenal lesions which could not be classified in this group.

RECENT LITERATURE ASSOCIATING ARTERIAL HYPERTENSION WITH ENDOCRINE DYSCRASIA

During the last year there have been three papers (Riesman,[28] Hopkins,[29] and Gutmann[30]) referable to increased hypertension associated with the menopause. Spiethoff, from an analysis of twenty cases of exophthalmic goiter, found a variable blood pressure dissociated from the general symptomatology. With these exceptions, there has been comparatively little literature extant referable to any number of endocrine states or cases associated with high blood pressure. Isolated cases of endocrine diseases have been reported, in which high blood pressure has been noted. Gibson[31] suggested the idea of an association of arteriosclerosis with pituitary disorder, and reported a number of cases in which there was arterial hypertension. Riesman[28] noted, besides the relation of arterial hypertension to the climacteric, its presence in both pituitarism and thyroidism. Hopkins,[29] in two exhaustive papers, has fully described this relationship of arterial hypertonia to the menopause. Plummer has noted its incidence in thyroidism.

In the forty-six cases here reported, it will be noted that high blood pressure was found associated with disturbed activity of various ductless glands, occurring in both sexes and in ages other than that of the menopause. The largest percentage of cases was grouped with those in which occurred polyglandular insufficiency, involving the thyroid and the pituitary gland. It was found associated, however, in cases in which apparently but one endocrine gland was involved.

ABSTRACTS OF ILLUSTRATIVE CASES

CASE 1 (General 1259).—*Diagnosis: Polyglandular insufficiency (hypoituitarism and hypothyroidism).* Blood pressure (before treatment), 200 mm.; (after treatment), 160/95 mm.

History.—Mrs. E. S., aged 38, referred by Dr. F. H. Lamb, Davenport, Iowa, complained of marked fatigability; dyspnea on effort; nervousness, emotionalism, and headaches, of six years' duration. The onset of these symptoms had been gradual, with attacks of weakness, increasing fatigability, nervousness, emotionalism and headaches. One year after the onset, she suffered from attacks of very marked abdominal distention or bloating, associated with belching and constipation. During the entire course of the symptoms she had gained 85 pounds in weight, 25 pounds within the last eight months. There had also been irregular periods of polyphagia, polyuria and polydipsia. The hands and feet had been swollen and stiff intermittently during the last few years. She had suffered from somnolence, a marked complaint during the day, and insomnia at night. She had had measles and mumps during childhood, and bronchitis at the age of 16. Other findings were negative, except the menstrual. She had matured at 11½ years, since when the menses had been irregular, of three days' duration and the flow had been scanty. During the last two years, the flow had increased in amount and had been associated with slight dysmenorrhea. The patient's mother had died at the age of 76. She had been very obese, drowsy and somnolent for years. The cause of her death was unknown. One sister was very obese; four others were living and well. One brother was very obese, and had been relieved by thyroid treatment. One brother had very high blood pressure.

Examination.—The measurements were: from the symphysis to the soles of the feet, 32 inches (81 cm.); from the symphysis to the vertex, 34 inches (86 cm.), and the span was 70 inches (178 cm.). She was a large woman, weighing 207¾ pounds, with a tendency to the girdle type of obesity. There was considerable fulness through the thighs, and padding about the hypogastrium and over the mons. There was some enlargement of the legs and arms, with evidence of subdermal thickening. The skin was dry, and there was a fine desquamation. There was a slight growth of hair on the legs, but no abnormal distribution about other portions of the body. The hands were of the thyropituitary type: the fingers were tapering, the lunular markings were faintly visible, and there was definite puffing of the backs of the fingers and hands. The feet were of the same character. The color of the body was good and of the face, very good. The systolic blood pressure before treatment was 200 mm. of mercury; and after treatment, 160/95 mm. Regional examination was negative, except for evidence of an endocrine heart. A systolic murmur was heard over the pulmonic area, which disappeared on inspiration. The aortic second sound was slightly accentuated. Palpable arteries were not sclerosed. Single catheterized and twenty-four hour specimens of urine were negative. The phenolsulphonephthalein test gave a total of 85 per cent. Blood analysis revealed: hemoglobin, 110 per cent.; white blood cells, 12,600; red blood cells, 5,670,000. A smear and Wassermann reaction were negative. Nonprotein nitrogen was 25 mg. Sugar tolerance was normal. Blood sugar (after fifteen hours' fasting) was 0.130 (normal, from 0.10 to 0.120); one hour after 162 gm. glucose, 0.219 (normal, 0.180); two hours after 162 gm. glucose, 0.099 (normal, from 0.10 to 0.150). Basal metabolism (Benedict's) had decreased 10 per cent.

CASE 2 (General 1150).—*Diagnosis: Polyglandular insufficiency, hypopituitarism and hypothyroidism (pituitary hibernation). (Achylia and spastic colon.)* Blood pressure, 198/140 mm.

History.—Mr. C. W. M., aged 58, complained of marked somnolence (he was unable to remain awake unless actively engaged in some physical procedure); nocturnal insomnia and attacks of dyspnea, attacks of gastric disturbances, distention, fulness and pressure in the epigastrium; gradual gain of weight to 255 pounds, and high blood pressure, from 205 to 220 mm., of five years' duration. Somnolence had been gradual during the last few years, the patient being unable to keep awake while reading or talking. The onset of obesity was gradual; a few years before there had been a gain of 10 pounds within five weeks. High blood pressure, recording over 200 mm., had been first noted five years before, at the age of 53. He had suffered from nocturnal insomnia and dyspnea during the last year, and had had to assume the semireclining position for sleep. Dyspnea was present usually in the early morning hours. He had suffered an attack of renal colic several years before. He had had influenza one year before, and an operation on the nose, under a local anesthetic. The tonsils had been removed thirty years before. He had suffered from migraine during the ages of 16 and 17, but not since that age. He was a mild user of tobacco, and an inordinate eater. One sister had nephritis and his mother had migraine.

Examination.—The patient weighed 255 pounds. The lower measurement was 36 inches (91.5 cm.) and the upper measurement, 37 inches (94 cm.); the span was 76 inches (193 cm.). There was an osseous development of probable preadolescent anterior lobe hyperpituitarism. There was considerable obesity, but no extreme broadening through the hips. The abdomen was prominent; there was some bulging in the flanks, and a very slight padding about the mons.

28. Riesman, David: Hypertension in Women, J. A. M. A. **73**: 330 (Aug. 2) 1919.
29. Hopkins, A. H.: Treatment of Climacteric Hypertension, New York M. J. **110**: 930 (Dec. 6) 1919; Am. J. M. Sc. **157**: 826 (June) 1919.
30. Gutmann, B.: J. M. S. New Jersey **15**: 122 (April) 1918.
31. Gibson: Address on Medicine, Liverpool, 1912.

There was a slight abnormal distribution of hair on the upper abdomen; none on the chest, and a slight growth on the legs and arms. There was no edema, very slight pitting on pressure and no marked subdermal thickening. There were a few indifferent scars and pigmentations about the shins. The hands were of the pituitary type: the palms were broad, the fingers fairly long and tapering, and the lunular markings faintly visible. The feet were of the same general character. The skin was somewhat dry, showing very fine desquamation. The hands and feet were warm. The color of the body was good, the face was florid, and there was a slight general sallowness. There was no muscular atrophy, no abnormality of gait or station, and no cyanosis or dyspnea. The pulse was moderately slow, regular, with a quick rise and fall, equal and symmetrical. There was no pistol-shot sign in the forearm, nor Quincke sign visible in the finger nails. The blood pressure was 198/140 mm. There was a systolic murmur in the pulmonic area, which disappeared on deep inspiration. The second aortic sound was accentuated. The palpable arteries were easily compressed and not thickened or tortuous. The roentgen ray revealed a normal sella turcica (12 by 13 mm.). Stereoscopic examination of the chest revealed fulness over the right auricle and a normal aortic shadow. There were suggestive shadows of calculi in the left kidney. Fluoroscopic examination of the chest revealed aorta, heart, diaphragm, stomach and colon normal. Blood examination revealed: hemoglobin, 76 per cent.; red blood cells, 4,460,000; white blood cells, 8,400; differential count and stained smear, normal; Wassermann reaction, negative. Examination of stomach contents disclosed free hydrochloric acid, negative; otherwise normal. There was a trace of albumin in the urine. The phenolsulphonephthalein test gave a total of 38 per cent. Blood sugar (after fifteen hours' fast) was 0.120; one hour after 194 gm. glucose, 0.246; two hours after 194 gm. glucose, 0.180. The basal metabolism decreased 25 per cent. (Benedict's). Electrocardiographic examination revealed an absence of preponderance of the left ventricle.

Treatment and Results.—The patient was placed on thyropituitary substitution treatment (and hydrochloric acid and essence of pepsin for the achylia). The result of the therapy during two months' observation was complete relief of the gastric disturbances, somnolence, nocturnal insomnia and dyspnea, and reduction of the blood pressure to 154 mm. and of the weight to 220 pounds.

CASE 3. (General 1260).—*Diagnosis: Hyperpituitarism and hyperthyroidism.* Blood pressure, 220/135 mm.

History.—Mr. H. S., aged 45, referred by Dr. J. E. Jost, Jefferson City, Mo., complained of attacks of headache, vertigo, weakness, nervousness, insomnia and loss of memory; high blood pressure, above 200 mm.; loss of weight, amounting to 40 pounds during eighteen months, and marked attacks of dyspnea. The high blood pressure had been present for six years. The onset was gradual, with a mild sensation of fulness in the head, and vertigo, eight years before. Two years following this, high blood pressure was noted at examination, the systolic pressure being 190, and failing to react to dietetic, medicinal, electric or hydrotherapeutic treatment. Following the onset of the disturbance, there were terrific attacks of headache, with extreme vertigo, throbbing sensations and memory defect. There was loss of hearing in the left ear during the third year of the disease. Attacks of abdominal distention had been present during the last eighteen months, for which the patient frequently took repeated enemas, without relief. Following the onset of this disturbance, he began to lose weight, which loss had totaled 40 pounds during the last year and a half. He had suffered from no infectious diseases, no operations and no injuries. He did not use tea or coffee, he chewed tobacco, seldom smoked, used alcohol moderately, and had discontinued its use for the last seven years. The family history was negative.

Examination.—The measurements were: from the symphysis to the soles of the feet, 35¼ inches (89.5 cm.); from the symphysis to the vertex, 32½ inches (82.5 cm.); the span was 72 inches (183 cm.). The general development was good; there was some loss of weight but no marked evidence of emaciation. There was an osteochondroma on the inner aspect of the left leg, just below the knee. There was a marked growth of hair on the legs, with abnormal distribution on the upper abdomen, chest and forearms. There was a slight pallor of the body, but the color of the face was very good. The hands were long; the fingers were not tapering; the lunular markings were visible, and there was slight cyanosis of the nails. There was no edema or dyspnea, and no abnormality of gait or station. The thyroid was not enlarged. The systolic murmur in the anterior axillary line was not modified by respiration. There was marked accentuation of the second tone at the base. The systolic murmur heard at the base was transmitted upward, along the right side to the carotid, on the left side as high as the clavicle, and disappeared entirely on deep inspiration. There was marked accentuation of both second tones, and no tortuosity, motile pulsation or sclerosis of the superficial vessels. The blood pressure was 220/135 mm. There was a trace of albumin in the urine. The phenolsulphonephthalein test gave a total of 52 per cent. Blood examination revealed: hemoglobin, 110 per cent.; red blood cells, 5,910,000; white blood cells, 6,800. A stained smear and differential count were normal; the Wassermann reaction was negative. Blood sugar (after fifteen hours' fasting) was 0.116; one hour after 115.3 gm. glucose, 0.148; two hours after 115.3 gm. glucose, 0.132. The nonprotein nitrogen content was 25 mg. Fluoroscopic examination revealed normal head, neck, chest, heart, mediastinum and diaphragm. Electrocardiographic examination disclosed absence of left ventricular preponderance. Basal metabolism had increased 4 per cent.

CASE 4 (General 1197).—*Diagnosis: Menopause (hypothyroidism and hypo-ovarianism).* Blood pressure, 220/130 mm.

History.—Mrs. S. B. C., aged 53, complained of a throbbing sensation in the head, tinnitus; dyspnea on exertion; nervousness and insomnia; abdominal distention and constipation; of four years' duration, from the time of the menopause (age 49); blood pressure, 210 mm. The onset had been gradual, with nervousness, insomnia, a throbbing sensation in the head, and headaches. Soon afterward an abdominal syndrome began, consisting of distention, constipation, a sensation of gurgling, and diffuse tenderness. There were no localized or focal symptoms or complexes resembling appendicitis or gallbladder or renal disease. During the course of the patient's disease, she was in bed three times with attacks of so-called sciatica, which were limited to the hip, never occurring along the course of the sciatic, and never being associated with temperature or localized tenderness. Arterial hypertension was first noted two years before, since which time it has fluctuated during twenty-four hour intervals, from 210 to 150 mm. She had had measles, mumps, whooping cough and chickenpox. She had undergone two operations: a perineorrhaphy and amputation of the breast for benign tumor. The menstrual history was normal, with the exception of a scanty flow and a menopause which occurred at the late age of 49. The family history was negative.

Examination.—The measurements were: from the symphysis to the soles of the feet, 34 inches (86.25 cm.); from the symphysis to the vertex, 32½ inches (82.5 cm.); the span was 67½ inches (171.5 cm.). The patient was a large woman, but well built and without abnormal obesity. There was slight fulness through the hips (not abnormal); no fulness over the hypogastrium or mons; very slight growth of hair on the lower extremities, and no abnormal distribution on the upper extremities. There was an erythematous blush on the base of the neck and upper chest. The hands were long and fairly slender; the fingers inclined to taper, and the lunular markings were visible. There was no edema, cyanosis or dyspnea, and no abnormality of gait or station. The color of the body and face was good. The thyroid was normal. There was a diffuse impulse over the precordia, accentuated by nervousness. The apex beat was heard in fourth interspace, at about the midclavicular line, forceful but not heaving. There was no palpable thrill or diastolic shock. Borders, apex beat, midsternal line. The first tone at the apex was loud and booming, followed by a short

systolic murmur, which disappeared on inspiration (cardiorespiratory). The same murmur was heard in the pulmonic area, and a similar murmur in the aortic region, which disappeared on inspiration. The aortic second sound was accentuated and sharpened. The pulse was moderately rapid, of fair volume and tension, regular, equal and symmetrical. The peripheral vessels were free from mobile pulsations, not tortuous, nodular or sclerosed. The blood pressure was 220/130 mm. Single and twenty-four hour specimens of urine were normal. The phenolsulphonephthalein test gave a total of 60 per cent. Blood examination revealed: hemoglobin, 104 per cent.; white blood cells, 7,200; red blood cells, 5,140,000. A stained smear was normal; the Wassermann reaction was negative. Nonprotein nitrogen was 23 mg. Blood sugar (after fifteen hours' fasting) was 0.090; one hour after 111 gm. glucose, 0.159, and two hours after 111 gm. glucose, 0.111. Basal metabolism decreased 18 per cent. Fluoroscopic examination of the head, neck, lungs, thoracic vessels, mediastinum and diaphragm was normal; there was very slight left ventricular hypertrophy. Electrocardiographic examination revealed a slight left ventricular preponderance.

Treatment and Results.—Under one week's treatment, consisting of thyroid and corpus luteum substitution, the blood pressure dropped to 144, and remained below 150 for three weeks.

CLASSIFICATION OF CASES

1. Pituitary gland	5
(a) Hypopituitarism	4
Simple hypopituitarism	1
Pituitary headache	1
Eunuchoid gigantism	2
(b) Hyperpituitarism	1
Pituitary glycosuria	1
2. Thyroid gland	12
(a) Hypothyroidism	8
(b) Hyperthyroidism	4
3. Ovaries	15
(a) Menopause	11
Associated with hypothyroidism	4
Associated with hyperthyroidism	3
Associated with hypopituitarism	2
Associated with eunuchoidism	1
Associated with migraine (pituitary?)	1
(b) Gonad	4
Eunuchoidism	1
Early castrate	1
Late castrate (with hypothyroidism)	2
4. Polyglandular	14
(a) Pituitary and thyroid	12
Simple pituitary and thyroid insufficiency	9
Associated with pituitary headache	1
Associated with hibernation	1
Hypersecretion of pituitary and thyroid	1
(b) Thyroid and gonad insufficiency	1
(c) Pituitary, thyroid and gonad insufficiency	1
Total	46

ANALYSIS OF PERSONAL OBSERVATIONS

In an analysis of more than 500 endocrine cases observed during the last four years, it was found that forty-six, or about 10 per cent., had a blood pressure above 160. Those cases in which a diagnosis of nephritis or arteriosclerosis was suspected were excluded. Of the forty-six, the highest percentage of arterial hypertension was found among the pluriglandular dyscrasias. Fourteen of the forty-six, or 30 per cent., were classified as having more than one gland involved, with none so sufficiently dominating the picture or initiating its course that it might be considered the primary secretory disturbance, with the other glands classed as secondary. Combinations of the pituitary and thyroid hyposecretions were present in twelve cases, or about 26 per cent., of the hypertensive cases. The next highest percentage, eleven cases, or one fourth of the entire number, occurred at the menopause. In cases in which there were glandular disturbances apparent in this group, they were merely considered as a part of the climacteric. For instance, in four there was evidence of hypothyroidism; in three, hyperthyroidism, and in two, hypopituitarism. Of the primary gonad insufficiencies, there were four cases, or 9 per cent.; one in a eunuchoid person, two in a late, and one in an early castrate. The next in frequency was the thyroid group, with eight cases, or 17 per cent., classified as pure hypothyroids, and four, or 8 per cent., as hyperthyroids. The pituitary group ranged lowest in number, five cases, or 11 per cent., being classified as simple dyscrasias of this gland. Of this number, four were hypopituitarism and one hyperpituitarism. One of these was a case of pituitary hibernation, one a case of pituitary headache (both reacted to substitution pituitary treatment), one a hypophysial glycosuria, and two eunuchoid giants.

DIAGNOSIS

The diagnosis of this type of arterial hypertension is necessarily difficult and perhaps many times questionable. The important diagnostic objectives are the exclusion of the following organic lesions: (1) renal disease; (2) cardiovascular disease; (3) subacute or chronic infections (focal and general) and intoxications (syphilis, lead poisoning, gout, etc.); (4) other conditions producing arterial hypertension (increased viscosity of the blood in plethoric individuals, obesity, diabetes, migraine, organic nervous diseases, pregnancy, eclampsia, premenstrual arterial hypertension, and intermittent or paroxysmal hypertension).

1. The first essential is to exclude, if possible, all varieties of renal disease. Dependence has been placed on complete and prolonged observation of the case, including repeated urine analyses, concentration power of the kidney (Mosenthal renal test), the phenolsuphonephthalein functional test, blood retention products (total nonprotein nitrogen, urea, creatinin and uric acid), retinal changes, and cardiovascular signs ordinarily associated with renal disease, such as cor renale, left ventricular preponderance (electrocardiogram), and accentuation of the second aortic tone. The variability of the blood pressure has been an important differential sign. Marked vacillation of from 40 to 60 mm. of pressure in twelve hours, or a rapid reduction of the pressure of more than 60 mm. by treatment, has been considered not due to renal disease. For instance, in Case 4, reported in this article, the systolic pressure, according to the history, had varied from 210 to 150, and quickly fell from 220 to 134 after three days of a treatment that allowed the patient a regimen of moderate exercise, a liberal diet, and freedom from eliminants and vasodilators. On such non-nephritic treatment, the pressure remained below 150 for the following two weeks.

2. The exclusion of arteriosclerosis is another very difficult problem. It is well known that there is frequent sclerosis of the visceral arteries, with absence of all signs of sclerosis of the superficial or palpable vessels. A history of a previous disease that might have produced either arteriosclerotic degeneration or renal lesion, or a thickening, nodulation, tortuosity or pulsating mobility of the superficial vessels is, of course, significant. Changes in the conjunctival and retinal vessels, or changes in the arch of the aorta or the left ventricle of the heart (demonstrated by roentgenologic examination) must also be sought. The clinical symptoms that are frequently associated with visceral sclerosis, sclerotic dementia and angina pectoris, abdominis and cruris are valuable diagnostic aids.

3. Besides the foregoing negative evidence for vasculorenal disease, there should also be negative evi-

dence for focal or general infections, which frequently have a very decided effect on arterial tension. This also pertains to subacute or chronic intoxications and other metabolic diseases, such as plumbism and gout.

4. The fourth group of conditions which must be borne in mind borders very closely on the type of arterial hypertension that has been under discussion as being associated with endocrinous states; possibly some of these should really belong to the group described. Bac,[32] in a recent publication, has renewed the interest in the viscosity of the blood as a possible cause for arterial hypertension in plethoric or obese persons. The intermittent or paroxysmal hypertensions present in migraine, pregnancy, eclampsia and the premenstrual state, or in other so-called functional, neurotic or emotional arterial hypertensions, would probably either fall within this class of arterial hypertensions, or be disqualified entirely, because not persisting for sufficient time to be classified as a definite syndrome. Their differentiation depends on repeated blood pressure observations during the same day, or for a number of consecutive days. In fact, a single blood pressure reading is unreliable, and needs many confirmations. In the great majority of the cases that I have observed, the initial blood pressure reading was usually entirely disregarded, on account of being from 20 to 40 mm. higher than the average procured by making daily examinations. At the same time, the daily variation and the susceptibility of the patient to temporary impressions must, of course, be given consideration in making the final average estimation of the blood pressure.

It must be acknowledged that even after the most searching observations, all clinical evidence sufficient to differentiate and exclude renal and vascular lesions may be lacking, and yet a positive renal or arterial lesion be present. This fact must be borne in mind in each individual case; otherwise, the diagnosis in these cases is subject to a certain percentage of error.

Besides the foregoing negative evidence, there must be present in each of these cases a sufficient history and a definite syndrome of demonstrable endocrine disturbance to account completely for the symptomatology.

PROGNOSIS

The prognosis in these cases is very much more favorable than in those in which there is high arterial tension due to definite vasculorenal lesions. Their course is much longer and less beset with disturbing symptoms than other types of arterial hypertonia. It is true that many of them develop arterial disease, sooner or later; possibly others develop renal disease. The termination of these cases is rarely that accompanying any of the nephropathic diseases, such as uremia. If the arterial tension is not reduced or reducible, many cases terminate from cerebral hemorrhage or cardiac incompetence. For this reason, the term "benign or functional hypertension" is a misnomer, since the high blood pressure is certainly one in which the indications for treatment are just as urgent as in those due to other causes.

TREATMENT

The treatment depends entirely on the treatment of internal secretory dyscrasia, with which this abnormal hypertonus is associated. The general indications for treatment are merely those of correcting, if possible, the disturbed internal secretory balance. If this can be accomplished, in the majority of the cases the blood pressure will be very much reduced, and frequently return to and remain within normal limits. It can readily be understood that the treatment for these cases is entirely different from that directed toward nephritic or arteriosclerotic hypertension.

The low protein and salt-free diet, as ordinarily recommended for these conditions, has no basis in the majority of cases. Increased elimination, ordinarily applied to the nephritic cases, is also frequently contraindicated. It has been noted, in some of these cases, that the drugs which appear to be absolutely contraindicated in other types of arterial hypertension, on account of their vasoconstriction effects, are really applicable and effective agents. For instance, pituitary extract (hypophysial posterior lobe extract) has been demonstrated actually to reduce the blood pressure in pituitary hibernation, probably on account of its effect on the carbohydrate or fat metabolism, which is the basic fault or cause of the arterial hypertension in these cases. Epinephrin, on account of its hormone effect on the gonads, might also be indicated in the menopause or gonad types. In the hypersecretory cases, such as hyperthyroidism and hyperpituitarism, surgery might even play a rôle in an attempt to relieve the high blood pressure. This is an instance in which arterial hypertension itself would not be a contraindication to a surgical operation, provided the diagnosis is sufficiently clear to prove that the increased secretion from these glands is its sole cause.

923-934 University Club Building.

32. Bac, A. A.: Internat. Clinics Series 29, 1: 116, 1919.

ABSTRACT OF DISCUSSION

Dr. Francis M. Pottenger, Monrovia, Calif.: We have studied the cause of disease, and the results of disease, but we have neglected to study how the cause operates to produce the effect. Nerve control and internal secretions are two factors through which stimuli operate to produce results. A symptom is a resultant of all stimuli. Consequently, it is difficult to say that any one produces this result. We must learn how to analyze conditions and then determine the results. We must bear in mind also the psychical condition. Nearly all neurotics are merely psychics. Stimuli are discharged either through the nervous system or through the endocrine system and upset balance. The result may be a hyperarterial tension or a hypoarterial tension. These are the conditions that must be studied.

Dr. Gustave Roussy, Paris, France: (Dr. W. S. Thayer, Baltimore, translated the substance of Dr. Roussy's remarks.) Dr. Roussy refers to the observations made some years ago by Josué, who provoked a disease of the vessels, an arteriosclerosis, in rabbits by treatment with the suprarenals. The frequency of suprarenal changes in hypertension in arteriosclerosis was also studied by Mendel and others, who pointed out particularly the changes in the cortical part of the suprarenals. Vaquez demanded further whether this were, perhaps, after all not the primary element in many of these instances of hypertension, clinical hypertension, and anatomic arteriosclerosis.

Dr. Roussy studied with Dr. Clunet, about 1,000 cases, carefully, anatomically. In 200 cases, a systemic examination was made of the glands of internal secretion, and in many instances definite changes were made out, very commonly in the suprarenals and particularly in the cortical substance; sometimes there was a hyperplasia of the pituitary body, especially of the chromophil cells or eosinophils, while the chromophil cells were increased. Also sometimes changes in the thyroid were present; hyperplastic changes were found in the parathyroids. In some instances well marked arteriosclerosis and hyperplasia of the suprarenals were also noted. Dr. Roussy pointed out that there are other

instances of arteriosclerosis in which changes in the glands of internal secretion are not to be made out. One should study and consider not only the anatomic conditions, but the interpretation of those conditions. In some cases of arteriosclerosis the suprarenals are affected; in others, they are not. The coincidence of the arteriosclerosis and the lesions of glands of internal secretion may be interpreted in the sense that the arteriosclerosis is purely secondary to the hyperplastic changes in the glands of internal secretion. It may be, on the other hand, that the converse is true, that the changes in the glands of internal secretion may be secondary to the changes in the vessels; or lastly, they both may be the result of some other condition of which we are as yet not cognizant. At this moment the explanations are hypothetic. It is a very important matter for further study.

DR. C. J. FISHMAN, Oklahoma City: Clinically, we occasionally see a type of case in which we may say that the endocrine system is affected, namely, in cases of high blood pressure, with a mild degree of glycosuria. We must remember that glycosuria may be produced by injections of suprarenal, and that this substance also produces an increased blood pressure. That is one basis for conclusion. Another basis is that clinically these cases of high blood pressure, with a mild degree of glycosuria, when treated by the reduction of the carbohydrates, return to normal, the blood pressure is reduced and the glycosuria disappears. I have seen three such cases and I believe that increased suprarenalism may be responsible for the high blood pressure and the glycosuria.

DR. F. M. ALLEN, New York: According to present evidence diabetes is not a disturbance of the suprarenal system. The glycosuria is not due to suprarenal stimulation. The vascular changes produced by epinephrin injections in rabbits are probably not a true reproduction of human arteriosclerosis. Many other agencies will produce such changes in the rabbit, which is a very susceptible animal.

Dr. Roussy failed to mention the important contribution of French authors to this subject, beginning in 1903. They established a relation of the chlorids not only to edema but also to high blood pressure. Salt restriction is the most effective means for the control of hypertension, and it has fallen into disuse and disbelief largely because of faulty application. It is seldom enough to tell patients to avoid salt, for most of them, even when conscientiously trying, will still get several grams daily, which will suffice to keep up the pressure in most cases. Before calling any case a failure, it is necessary, first, to give a genuinely salt-poor diet, containing less than 0.5 gm. of sodium chlorid daily; second, to make such a diet appetizing, so that the patient will eat it; and third, to control the treatment by blood and urine analyses to prove the efficiency of the chlorid restriction. Most such patients need treatment in an institution, to be treated and instructed as thoroughly as are diabetics, in order to obtain the best results. In this way some high pressures are brought to normal; some are altered very little or not at all; but the great majority of patients obtain some degree of relief. Cases of hypertension coming on about the menopause seem generally to be of the high chlorid type, and yield to salt restriction. Suitable tests may reveal the beginnings of some such cases long before the menopause, and study of the salt economy may prove important in relation to etiology and prophylaxis. A patient may have more than one disease, neither one dependent on the other. A woman had hypertension and myxedema. Her hypertension responded to salt withdrawal, and her myxedema to thyroid extract. Apparently the two conditions were independent. Many cases of combined metabolic disorders may perhaps be of this type My longest observation of successful control of hypertension by salt restriction was fifteen months. Wherever good results have been obtained they have been permanent.

DR. W. S. THAYER, Baltimore: The actual physiologic cause of hypertension in most cases is by no means clear. Spasm of the peripheral vessels or extensive thickening of the small peripheral arteries is followed by hypertension, and that is all we know about it. The occurrence of associations is an important point to bear in mind. It will be very interesting to know the effect of treatment in the cases of hypertension, which Dr. Engelbach believes are due to disease of the glands of internal secretion, and how long such cases have been observed. Dr. Allen's observations with regard to the effect of salt-free diet are very interesting.

DR. WILLIAM ENGELBACH, St. Louis: Dr. Roussy referred to the relationship of the histopathologic changes of the suprarenal, the nervous system and other glands to the clinical syndrome of endocrine disorders. One must acknowledge that no such relationship has yet been established, owing, possibly, to difference of opinion among pathologists regarding the pathology of this disease. There exists a great deal of controversy among the French, who have contributed so much on the subject of internal secretions, that no positive deductions can be drawn from their work on the pathologic changes present in these diseases. Dr. Fishman's reference to arterial hypertension with epinephrin diseases does not correspond with my observations. In the great majority of cases there was a combination of glandular disorders, i. e., a pluriglandular syndrome. I can confirm Dr. Allen's statement that chlorid retention is responsible for a certain percentage of arterial hypertension but not for all high blood pressure cases. My position is much the same as his with relation to endocrine disorders being responsible for a small percentage of the cases of arterial hypertension; not, however, to the exclusion of many other well known causes. In the series of endocrine cases reported, we obtained good results with glandular therapy, without denying the patient a generous diet containing plenty of salt and allowing active exercise.

GOUT: A CLINICAL STUDY OF ONE HUNDRED AND SIXTEEN CASES*

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The analysis of the present series of cases was undertaken because of my conviction that few diseases that are capable of being easily and accurately diagnosed are so often overlooked, or rather misinterpreted, as gout. Among well trained men gout is still too often a curiosity, rather than a clinical entity to be encountered and recognized. With the desire of centering the attention on this fact, the present study was undertaken.

Our series consists of 116 cases, which includes the material of the Cook County Hospital for approximately six years. At the very outset it may be remarked that a perusal of the histories leaves no doubt that the diagnosis of gout was made only when the clinical picture was such as practically to compel that diagnosis. I am well aware that in some quarters the diagnosis of this disease is made very lightly, notably at some health resorts; but the reverse is the case in this series. All were clear-cut cases about which, once the diagnosis had been thought of, there could be but little difference of opinion among experienced clinicians. My own belief is that a very considerable number of cases in the hospital go begging for a diagnosis. This is particularly true when patients are sent by mistake to the surgical wards. I have carefully checked the diagnoses as made at the examining room when the patients were admitted to the hospital. In general these diagnoses are exceedingly good, and it is remarkable at times with what

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acumen the house physicians detect really difficult cases; yet of our 116 patients, only twenty-nine were admitted as having gout or even suspected gout, despite the fact that sixty-five of them had the diagnosis written on their ears in unmistakable characters.

The conclusion is to my mind inevitable: Our younger clinicians are not on the lookout for gout, and as a result many cases are escaping us. Nor is it only the mistake of the inexperienced, for I can recall one patient who returned to the hospital on five different occasions at intervals of perhaps a year, before the correct and really very obvious diagnosis was made. Another patient was operated on in a surgical ward for an "infected hand" and the finger amputated, and the mistake never discovered until his next visit to the hospital a long time afterward. Still another patient left the hospital rather than be operated on for a "bunion," which a later stay in a medical ward showed to be an ordinary gouty toe. Indeed, this mistake was repeatedly made. Still a third patient had a knee opened and scraped, and several years later a finger operated on, with the diagnosis of infectious arthritis.

Our series labors under one disadvantage in that our patients came from the poorer classes who seek admission to a public hospital. It can, therefore, give no information as to the relative frequency of gout in the poor and in the well-to-do classes, since ours were largely cases of the so-called "proletarian gout."

It is rather remarkable that only five of 116 entered the hospital in their first attack, the great majority of our patients having been admitted many years afterward. This is quite in line with what is seen in our hospital in other similar diseases, the patients rarely seeking relief until the disease has been of considerable duration. As the early attacks of gout generally last only a short time, followed by a long period of well-being, the patient puts off seeking hospital aid. Over and over again we find that on asking the patient, who on admission has six or eight joints involved, whether he has ever had anything like this before, we receive a negative answer. A direct question elicits the fact that he had a painful swelling in the great toe five years before, which he has not in any way connected with his present trouble. Further questioning elicits the fact that he has had repeated attacks of so-called "rheumatism." It is surprising how rarely the patient recognizes the identity of the toe infection with the subsequent enlargement of the larger joints.

RESULTS OF OBSERVATIONS

Incidence.—Futcher gives the incidence of gout for Johns Hopkins as 0.29, and states that this is just two-thirds that of St. Bartholomew's in London, which would be 0.435. In our hospital the ratio of admissions from gout to the total admissions to the medical service is 0.399, which approximates very nearly that of the London hospital.

Etiology.—The influence of sex is by far the most striking fact observed in that only one case occurred in a woman, an incidence of less than 1 per cent. The influence of age is best seen by arranging the cases in decades, it being understood, of course, that this refers to the age at first attack. From 0 to 10, no cases; from 10 to 20, no cases; from 20 to 30, 15 per cent.; from 30 to 40, 37 per cent.; from 40 to 50, 29 per cent.; from 50 to 60, 18 per cent.; from 60 to 70, 1 per cent. The average age at time of first attack was 38 years. The interesting fact elicited is that 15 per cent. of our patients developed their first attack before their thirtieth year. This is rather opposed to the idea that gout is exceedingly rare before 30 or 35.

Nativity.—America leads with 47 per cent.; then come Ireland with 17 per cent.; Germany, 13 per cent.; Scandinavia, 7 per cent.; Austria-Hungary, 6 per cent.; Italy, Russia, France and Canada, each 2 per cent., and Belgium and England, each 1 per cent. In the population of a hospital, the cosmopolitan character of which is surpassed by few, it is rather noteworthy that not a single case appeared in a Pole, despite a very large number of Polish patients. The influence of race is shown in the fact that all of our patients, except two, were white.

Seasonal Influence.—This is quite pronounced. Of 126 attacks occurring in our 116 cases, we find the incidence as follows: January, 9; February, 6; March, 14; April, 20; May, 16; June, 11; July, 9; August, 3; September, 5; October, 8; November, 12; December, 13. Grouping these by seasons, we find that the spring months easily lead with fifty cases (40 per cent.); the winter months next with twenty-eight (22 per cent.); the fall next with twenty-five (20 per cent.), and the summer last with twenty-three cases (18 per cent.). It is exceedingly difficult to form an accurate idea in regard to the reasons for this predominance of the cases in the spring months. In some years it is much more striking than in others. I have not been able to trace any relationship between weather conditions and the frequency of attacks. A month of atrocious weather will go by without a case, followed by a week of beautiful balmy weather which may bring in four or five cases. There is, moreover, no uniformity in regard to an individual case. One patient had his attacks invariably in November, another invariably in autumn and winter, while another patient had seven different attacks in seven different months. Several patients noted that their attacks were ushered in by cold, damp weather, particularly if they got wet. In one patient the first attack was brought on by prolonged wading while on a fishing trip.

Heredity.—In our series only twelve gave any history of joint conditions in the family, and in several of these the condition was probably not gout. While it is undoubtedly true that patients in a charity hospital are less likely to have accurate information in regard to this point, especially if they are foreigners, than would private patients, it is my belief that these figures are substantially correct. In all the cases in which I have questioned the patient on this point, heredity was an insignificant factor.

Occupation.—The occupations were analyzed particularly with reference to the influence of lead poisoning. In only eleven instances (9.4 per cent.) was the occupation such that the patient had to deal more or less with lead. In none of the cases did lead seem to have been an actually demonstrable etiologic factor; that is to say, in none of them was there an outspoken plumbism present, as evidenced by colic, lead line on the gums, etc. The great majority of the occupations were those requiring hard manual labor.

Alcohol.—On the other hand, the influence of alcohol was very striking. Only four patients stated that they drank no alcohol or in negligible quantities. In nine cases the patient consumed a small amount of alcohol daily; forty-one others declared themselves to be moderate drinkers, while the remainder were heavy drinkers, some to great excess. No difference could be noted in those who consumed only beer and those who

drank whisky by itself or in addition to beer. The latter condition of affairs was the common one.

Trauma.—The influence of trauma has been much discussed, but in our series we were not able to determine that it was of influence in even a single case. I myself have seen several cases in private practice in which the patient stated that the attack was occasionally ushered in by stubbing the toe or by stepping down from a wagon or something of this sort. A closer analysis of these statements leads me to believe that the patient has confused cause and effect. By this I mean that in most instances the patient's attention is drawn to his toe because it is already inflamed, rather than the reverse.

Syphilis.—The incidence of syphilis is not so frequent as might have been expected among patients of this character, as it occurred in slightly less than 15 per cent. of the ninety-one cases in which it was specifically mentioned. A comparison of the ages at which they had the initial lesion with the age at the first attack of gout shows that in 4 per cent. the gout antedated the syphilis, leaving 11 per cent. of cases in which syphilis might conceivably have been an etiologic factor. The average duration of the syphilis at the time of the first attack of gout was sixteen years. In only one of these cases was there found any clinical evidence of the existence of syphilis, such as aortitis, tabes or skin rashes.

Overeating.—It is worthy of note that in a class of patients in whom want and privation might be reasonably supposed to play an important rôle, we find no evidences of this in our series. In 101 instances in which the condition is specifically noted, we find ninety-two patients noted as well nourished, and in most instances well built. Eight were fairly well nourished and only one poorly nourished. These figures are all the more striking in view of the statement made in many of the histories that the patient had lost considerable weight just before entrance to the hospital. We are to interpret these findings, therefore, as showing very decisively that the big, well-developed, portly individual is the one who develops gout, and this, too, in a population which is normally none too well nourished. The fact must not be lost sight of that the influence of alcohol may here be of moment, in that when we read that a man has been accustomed to drink a quart of whisky or twenty or thirty glasses of beer daily, the food value contained in these drinks is very considerable.

Nephritis.—The theoretical importance of nephritis in connection with gout is of course very great, and all the more so in view of the importance of recognizing a renal gout. Of our 116 cases, fifty-two (45 per cent.) showed albuminuria. In only seven instances was a nephritis thought to be of sufficient importance to make it part of the diagnosis, and in no instance was it ever recorded as a primary diagnosis, nor had any of the patients been in the hospital previously for a nephritis. In twenty-two instances the coexistence of albuminuria with a blood pressure definitely, but not greatly, above the normal for the patient's age made the beginning of a contracted kidney at least possible, perhaps probable. It would seem clear from our figures that in spite of the many cases of albuminuria there were relatively few cases of true nephritis.

Clinical History.—First Attack: In five instances the patient entered the hospital with his first attack of the disease. In only one were there any prodromal symptoms, these consisting of chilly sensations and cough. The onset in all was acute, with intense pain in the affected joint, which was in the great toe in three cases and the instep in two. The pain is described in all as intense, and in one so great that the patient "rolled around in agony." The joints were moderately swollen in all of them, and red and hot. The fever is noteworthy in that the average was only 100.3 F. One of these patients is in the hospital at the time of writing, and it is remarkable how much inflammatory change exists in the toe and how intense is the suffering as compared with the trifling rise in temperature. One patient had been ill for four weeks before admission, and in addition to this spent twenty days in the hospital, which is the best evidence of the severity of the attack. The remaining four patients averaged three days' sickness before entering the hospital, and remained in the hospital on an average of two weeks. One of these patients had outspoken nephritic symptoms with beginning broken compensation with this, his first attack of gout, and this case we have reckoned as our only case of probably true renal gout. In only one of these first attacks were any other joints than those of the foot involved. In this particular patient both knees were attacked. The remarkable feature of these first attacks is their uniformity, each case being almost a replica of the others.

Subsequent Attacks: The same uniformity exists in those patients who came in for second or subsequent attacks. These patients, 111 in all, form the entire series, with the exception of the five just discussed.

As there is generally a lapse of some years between the first and subsequent attacks, it was not always possible to determine with certainty in what joint the disease began. As a matter of fact, the average time that had elapsed between the first attack and the entrance of the patient into the hospital was ten years, since the average age at entrance was 48 years, and that of the onset of the disease 38 years. In 88 per cent. of our cases in which the joint first affected could be definitely determined, this was in the great toe, and it is noteworthy that the right toe was involved a little more than four times as frequently as the left. The small toes were involved by themselves once, the ankle and instep five times, the left thumb once, and the left knee once. It is equally striking that in those cases in which the disease began in some other joint than the great toe, it showed a strong tendency to attack that member later on. In our series this was the case to such an extent that 95 per cent. of our patients had the big toe involved sooner or later, leaving only 5 per cent. that had never had the big toe involved.

The great majority of the patients developed the attacks at night and with great suddenness. A few noticed the pain and swelling coming on in the daytime, and we note that when this is the case it comes on during the day in subsequent attacks.

Four cases were definitely polyarticular in their first attack. Because of the difficulty in the diagnosis of these cases, I shall give them a little more in detail. In the first case, both ankles, both big toes, the left knee and the index finger of the left hand were simultaneously involved; in the second, the hands and feet were affected; the third was unfortunate enough to have the right foot and instep, the right knee, the right hand, the left shoulder and the left foot simultaneously involved; the fourth showed swelling, redness and pain of the right ankle, right knee, left knee and the little and middle fingers of the right hand, and the middle

finger on the left hand. In all of these, tophi were subsequently found in the ears, and in two of them, sodium biurate crystals in the joint fluid.

These cases which are polyarticular from the very beginning should be sharply differentiated from the ordinary case, which begins in the toe and perhaps remains limited to the toe, or to the toe and instep for several attacks, and then, as these become more numerous, the number of joints involved becomes greater, and this to such an extent that 106 of the 116 cases became definitely polyarticular in the further course of the disease. The hospital physician who, for the most part, sees the case only after many attacks, is thus confronted with a picture of six or eight joints simultaneously involved. This fact probably accounts for the many times the disease is diagnosed as acute articular rheumatism. It is remarkable how little elevation of temperature is usually present, the average maximum of our series being 100.3. This we regard as of the highest diagnostic significance, since there are few clinical pictures in which a half dozen joints are greatly swollen and reddened which exhibit so little fever.

As compared with the descriptions given by most authors, the majority of our cases seem of unusual severity. The average length of attacks was twenty-nine days, some covering several months.

Tophi were present in sixty-six instances (56 per cent.). They were present in the ears sixty-five times, and in only one case were tophi found elsewhere without the ears being simultaneously affected. This case was in the great toe, producing a bunion-like deformity. In fourteen instances there were tophi in the ears and in other portions of the body as well. Such other locations were the fingers, toes, knuckles, thumb, elbows and the thyroid cartilage. Bursae were found four separate times, three times over the olecranon and once over the acromion.

The blood findings in our cases were quite uniform. A moderate leukocytosis occurred in most of the cases. The highest count that we have recorded is 19,800; the average count is 10,500. The average differential count was: polymorphonuclear neutrophils, 74 per cent.; lymphocytes, 14 per cent.; large mononuclears and transitionals, 11 per cent.; eosinophils, 1 per cent. The blood pressure, as would be expected from what has been said in regard to nephritis, was somewhat higher than normal, and averaged 147 systolic.

One frequently sees the statement that after an attack of gout the patient generally feels better than before. While this may be true in certain cases, we could not determine that it was true in any considerable number of our series.

The Roentgen Findings.—In forty-two of our cases, careful roentgen-ray studies were made of the joints involved. Fourteen of these cases were reported by the roentgenologist as either showing definite gouty changes or else changes that were consistent with gout. All of the other twenty-eight cases were returned with the statement that the joint changes indicated hypertrophic ostearthritis, or else showed arthritic changes of an indefinite character. Of the fourteen cases recognized by the roentgen ray as gout, thirteen showed tophi in the ears, and the fourteenth patient had a gout of fifteen years' standing. Of the twenty-eight cases in which the roentgen findings were not characteristic of gout, twenty-one showed tophi in the ears. Now it is very evident that all of these cases were far advanced, and the conclusion, therefore, seems inevitable that even in the most skilled hands, the roentgen ray is of very little service from a diagnostic standpoint. Long before the roentgen-ray findings are sufficiently definite to warrant a conclusion, the diagnosis can be made by the usual clinical means. Conversely, the roentgen ray in nearly two thirds of all the cases submitted to it not only failed to assist in the diagnosis, but tended, if anything, to lead one to arrive at wrong conclusions. We may not, therefore, give the roentgen findings a very high place in the diagnosis of gout, since the changes are not sufficiently characteristic to enable the differentiation to be made between it and kindred joint affections.

Association with Other Diseases.—The two classical diseases of metabolism associated with gout are, of course, obesity and diabetes. We have already noted under the etiology that the great majority of our cases were well nourished. In addition to this we find eleven instances in which the patient was spoken of as directly obese, and in a few instances the obesity attained considerable proportions. This was particularly true among the heavy beer drinkers. On the other hand, not a single case in all the series showed sugar in the urine at any time.

The abarticular forms of gout were almost nil in this series. One patient died of angina pectoris while in the hospital. A severe sore throat preceded the onset in five cases, and this further increased the resemblance to acute rheumatic fever.

CONCLUSIONS

The frequency of gout under our conditions is much greater than is commonly thought. Errors in diagnosis are relatively numerous, owing, not to the inherent difficulty in the recognition of the disease, but to the erroneous assumption of its great rarity in this country.

25 East Washington Street.

ABSTRACT OF DISCUSSION

Dr. Walter L. Bierring, Des Moines, Iowa: Analyzing the report given in this excellent paper, one wonders that there are not local conditions or other influences which may explain this apparent increase in the number of cases. The cases are attributed largely to the incidence of good nutrition, or apparently good nutrition. Yet in many communities in which that obtains there is no gout, so that there must be something in the mode of life in a large city, of the class of patients that come to a large charity hospital to account for the greater frequency of these cases in the hospitals of the larger cities. With the clinical symptoms usually so well marked it is rather strange that the condition should be overlooked. An explanation may be found in the fact that we have been greatly interested in focal infections as causes of arthritis and have overlooked entirely, in a way, those cases of arthritis which were not due to infection. Furthermore, it occurs in single joints in many instances, and recurs frequently in the same joint; therefore, these patients are referred to the surgical service and the surgeon, not being on the lookout for tophi, overlooks the condition. Little evidence of infection, low fever and the involvement usually of single points, ought to make the diagnosis comparatively easy. The roentgen ray is practically a negative factor in the recognition of gout. Whenever there are distinct joint changes, the case most likely is one of arthritis deformans. We must rely on the appearance of tophi, and unless tophi are present we will always be in some doubt as to the existence of gout.

Sir Humphry Rolleston, London, England: In London there seems to be no doubt that gout is commoner in people

who are brought in contact with lead than in other people. In other industrial centers where lead poisoning is common, such as Newcastle on Tyne, gout is rare. The importance of lead gout was insisted on by the late Sir A. B. Garrod. It is generally believed that the connection between lead and gout depends to a certain extent on whether the patient takes beer or not. Trauma may act in two ways, by predisposing to the attack in the big toe joint, and also by once determining an attack. Thus, after an undoubted injury, such as the falling of a box on the foot, a gouty patient may in a day or two have an acute attack of gout in that joint, and other joints may suffer in that attack. In connection with the diagnosis between arthritis deformans and gout, the two may be combined, as was shown at the Cambridge experimental hospital. Lastly, to refer to a rather dangerous subject, that of abarticular gout: There is a distinct tendency to regard almost any manifestation occurring in a gouty person as gout; for example, gouty bronchitis, the gout going to the stomach, and even cerebral gout; and the diagnosis of gout and goutiness may easily be much abused. I would suggest, however, that the question of abarticular gout should be taken seriously into consideration. Gout is recognized as a disturbance of protein metabolism, and the manifestations of anaphylaxis are now well known; gouty patients are extremely susceptible to various articles of diet; in other words, a gouty person may present symptoms analogous to those of anaphylaxis. Therefore, gouty manifestations, although they are entirely different from frank articular gout, may be due to the same change of metabolism as occurs in gout, and from a practical point of view may react to the treatment proper for gout. Not very long ago I saw a man with high blood pressure and the subject of gout, in an attack of what appeared to be undoubted hemiplegia due to cerebral hemorrhage. For some hours he was extremely ill. Then an acute swelling of the big toe joint came on, and the symptoms rapidly improved. I agree with Dr. Williamson as to the association of pharyngitis with gout; a gouty person may very easily, as a result of some indiscretion, get an attack of pharyngitis, or sore throat, which is relieved by antigout remedies.

DR. ALEXANDER LAMBERT, New York: Gout is not of infrequent occurrence in the eastern area of the United States. I have noticed that these patients have an English or Irish ancestry more often than not. A remarkable fact brought out by Dr. Rolleston is the peculiar idiosyncrasies of gouty people, appearing in different members in the same families. I have known a man who could not touch white wines, while his brother could not touch red, and still another member of the family could not touch any alcohol. In other members of the family an attack was brought on by coffee. Food idiosyncrasy has much to do with the production of gout. A peculiarity of a gouty joint is that the point of maximum intensity of pain is on the side of the joint, not on the top, and less frequently on the bottom. The point of greatest tenderness is almost invariably on the side. Chronic gout is a disturbance of protein metabolism. One of the best remedies is iodin or the iodids, which stimulate the thyroid. the dry skin, the chipping nails and the dry hair are manifestations of hypothyroidism. I believe the thyroid has more to do with gout than any other gland. The patients whom I have treated on the basis of thyroid deficiency have done better than those whom I treated on any other basis.

DR. CHARLES SPENCER WILLIAMSON, Chicago: Any arthritis which involves the great toe, either as the first joint or simultaneously with some other joint, should be regarded as highly suspicious of gout. Garrod's observation was not only thoroughly sound, but, if anything, fell short of the truth. An important diagnostic feature is the relatively slight fever, at times none at all, taken in connection with the great acuity of the local symptoms. This is not a new point, of course, but I do not think that it has found its way into the general clinical consciousness of the medical profession. When you are called to a patient, especially if a middle aged man, and find him with both knees, an elbow or two, and at the same time the great toe greatly swollen, with a temperature of, perhaps, 99 F., do not forget to think of gout before anything else. By the time the case has reached this stage tophi are generally present in the ears, but they must be looked for with real care, as the diagnosis may depend on a little nodule in the ear scarcely as large as a small pinhead. I was very glad to hear Dr. Lambert bring out the point about the pain on the side of the toe. Less than ten days ago I called the attention of one of my interns to that point, but as far as I know it is new, and I was not sufficiently assured of the accuracy of my observation to be sure that it was of diagnostic importance. I have noticed half a dozen times that the pain is almost entirely on the side. I did not quite have the courage to bring that out. Let us rid ourselves of the idea that gout is a disease of extraordinary rarity in this country, since the incidence in general hospital practice is not much less than in a London hospital of the same general type.

A CLINICAL STUDY OF THE END-RESULTS OF SOME FOCAL INFECTIONS *

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In a casual survey of the literature on focal infections, one is impressed with the fact that only recently has the subject been studied from the standpoint of its bearing on systemic disease.

Until the last decade there were few notable contributions. In 1819, Rush reported the cure of a case of rheumatism by the extraction of a tooth. William Hunter, in 1899, recorded his studies of what he termed "oral sepsis." Later, the dentists Price, Broomell and Chayes in their articles cautioned against careless dentistry and neglected oral sepsis, suggesting the probability of systemic disease ensuing. Goadby's article in 1912 claimed the direct relationship of some joint conditions to focal infection.

It remained, however, for Frank Billings and his co-workers, especially Rosenow and Davis, to bring the subject prominently before the medical profession. Too much cannot be said in praise of their work, and the credit for the present knowledge of the subject must be given to them. Since the first paper by Billings appeared in 1912, tremendous enthusiasm has been manifested in this subject, many articles and one monograph appearing within the short space of eight years.

Despite this splendid work, there exists in many sources some doubt as to the part focal infections play in the production of diseases, and many are questioning whether or not any real relationship exists. A warning is sounded lest we, in our zealous efforts to eradicate suspected foci, sacrifice useful organs, such as the teeth and tonsils. I realize that in many instances the pendulum has swung too far, and that some practitioners are likely to remove sound teeth or tonsils without justification. If the cases are carefully studied from every angle, and all other possible etiologic factors eliminated, the prompt relief obtained by radical measures should convince the most skeptical that it is not due to accident, coincidence, or to any effect on the mind.

In this confused state of evidence, it may be of interest to hear the clinical experience of one observer, and note the end-results obtained in approximately 100 cases selected from a private and consultation practice, during a period of two years.

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The relation of the focus of infection to the symptoms in question has depended on: (1) the absence of any other demonstrable cause for the symptom; (2) the failure to cure the symptom by all other methods of treatment, and (3) prompt and continued relief, with no return of the symptom, on the cure or eradication of the focus of infection.

In this study, conclusions have been arrived at largely through the cooperation of a group of nose, throat and dental specialists. Great reliance has been placed on roentgenograms of the diseased structures.

SOURCES OF INFECTION

The teeth have been the most common source of infection, and all varieties of dental conditions, from pyorrhea to unerupted twenty-one year molars, have been encountered. The most common lesions were either apical abscesses or granulomas at one or more roots of devitalized teeth. The diagnosis was confirmed by plates of the whole upper and lower jaws, including all devitalized teeth. Not only should infected teeth be removed, but the cavities left should be thoroughly curetted.

The tonsils were next in importance as a seat of infection. The small fibrous, or submerged, tonsils were quite as frequently involved as those visibly infected and greatly hypertrophied. Complete enucleation with the capsule was usually necessary for permanent relief.

The sinuses were least in importance in this series. The maxillary sinus was most frequently implicated, because of its close proximity to the throat and nose. Transillumination and roentgenograms were employed to reveal existing trouble.

There has been no experience with foci of infection in other parts of the body. Billings, however, reports them in almost every conceivable location.

SYMPTOMS FOR WHICH RELIEF WAS SOUGHT

Pain occurring in 42 per cent. of the cases was the symptom for which relief was most frequently sought, the location usually being in the muscles of the neck, back, chest or limbs. In a few cases it occurred along the course of some nerve, frequently branches of the brachial plexus or the sciatic nerve. Its character varied from ordinary discomfort to intense agony, requiring morphin for alleviation. The painful area was not affected by changes in temperature, nor was it often associated with tenderness. It was not accompanied by fatigue, or other neurotic symptoms one might expect in neurasthenia. Conditions about the teeth most frequently produced these symptoms, though some cases were due to diseased tonsils or sinuses.

Case 1.—E. A. S., a white man, aged 50, had constant pains in the right back, side and hypochondriac region, at times severe enough to require morphin. A diagnosis of gallstones had been made, and operation advised. A physical examination of the chest and abdomen was negative. The gastric contents, urine and blood were normal. The Wassermann reaction of the blood serum was negative. Only temporary relief was obtained by the usual methods of treatment. Examination of the teeth disclosed two apical abscesses. Removal of the teeth afforded immediate relief, with no recurrence of pain.

Case 2.—H. C. N., a white man, aged 35, had pain in both shoulders, causing discomfort, rather than acute suffering. It was not especially related to the joints or nerves, but affected the muscles about both shoulders. There was no tenderness. It was not affected by changes in weather. Physical examination of the heart, lungs and abdomen was negative. The urine and blood were normal. The Wassermann reaction of the blood serum was negative. Examination of the throat revealed infected tonsils. The patient was always relieved for weeks at a time, by massage and squeezing out of crypts by a throat specialist. Ordinary methods afforded no relief. Tonsillectomy was finally performed, giving immediate relief, with no recurrence of pain. The patient made a gain of 12 pounds.

Fever, occurring in 18 per cent. of the cases, was second in importance as a symptom. The fever, seldom over 101 F., was not often accompanied by chills, though in a few cases night sweats occurred. These cases were usually ambulatory, resembling, and most frequently confused with, the fever of incipient tuberculosis. The foci were about equally distributed between the teeth and the tonsils.

Case 3.—H. R. W., a white man, aged 44, had had fever for four weeks, with some malaise, an occasional night sweat and a slight loss of weight. His highest temperature was 99.8 or 100, usually in the afternoon. The patient was not ill enough to go to bed. He had been at his office almost every day. Physical examination of heart, lungs and abdomen was negative. The differential blood count was normal. There were no plasmodia. On three occasions the Widal test was negative with typhoid and paratyphoid bacilli. The Wassermann reaction of the blood serum was negative. There was slight tenderness about the first lower molar on the right side, which was devitalized and crowned a few years ago. A roentgenogram revealed an apical abscess. Removal of the tooth was followed by prompt and permanent subsidence of temperature, with a gain in weight to normal.

Chronic headache as a result of focal infection has long been suspected by throat and oral surgeons. Often in their experience the removal of infected tonsils has relieved the patient of headache of long standing. In this series, chronic headache has occurred in 4 per cent. of the cases, each depending on tonsillar infection. In every case a prompt and permanent cure has followed tonsillectomy.

Case 4.—Mrs. W. V., aged 28, white, complained of headache, which had occurred rather frequently for the last two years. It did not occur at any regular time, nor was it related to the menstrual period. The patient had had no previous illness. She had had many examinations, with negative findings and no benefit. The last physician who made an examination suggested glasses, but they caused no improvement. Physical examination of heart, lungs, abdomen and pelvis was negative. Neurologic examination was also negative. The urine, blood and gastric contents were normal. The Wassermann reaction of the blood serum was negative. An oral surgeon reported that all sinuses were negative, but the tonsils were hypertrophied, showing evidences of infection in the crypts. Tonsillectomy gave prompt relief.

General debility with loss of weight and strength, resulting from focal infection, has occurred in about 10 per cent. of the cases.

This syndrome, as a rule, occurred in middle-aged adults, without any other apparent basis, and in most instances was accompanied by obvious diseases of the teeth. No cases have occurred with infection elsewhere. In many cases it was necessary to remove all the teeth in order to get rid of the severe oral infection, all ordinary methods of treatment having utterly failed. Removal of the teeth and treatment of the gums, when promptly and effectively done, was followed by marked improvement in the general condition, with a gain in weight and strength.

Severe secondary anemia occurred in 4 per cent. of the cases. In no case, despite the ordinary methods of treatment, such as rest, feeding and the continued use

of iron and arsenic, was there any perceptible improvement until the removal of the focus of infection. The cases were equally distributed between the tonsils and the teeth. In no instance did the blood present the morphologic appearance of pernicious anemia. There was usually a moderate reduction of the hemoglobin and in the number of erythrocytes, with normal differential and leukocyte counts.

CASE 5.—Mrs. N. O. E., aged 26, white, complained of weakness and indigestion, beginning more than a year before. Physical examination of the heart, lungs, abdomen and pelvis was negative. The Wassermann reaction of the blood serum was negative. The urine was negative. The gastric contents after an Ewald test meal showed free hydrochloric acid 5, total acidity 16. Blood examination revealed: leukocytes, 7,300; erythrocytes, 3,800,500; hemoglobin, 65 per cent. Differential count revealed: polymorphonuclears, 63 per cent.; transitionals, 1; lymphocytes, 29; large mononuclears, 5; eosinophils, 2. Red cells were slightly irregular in size. No normoblasts were seen. There were no plasmodia. Examination of the throat by an oral surgeon showed the tonsils to be hypertrophied and infected. Tonsillectomy resulted in an almost immediate gain of 12 pounds. Four months later the blood was normal.

The relationship of focal infections to albuminuria and nephritis has been proved and referred to by several observers, prominent among whom are Ophuls, Klotz, LeCount and Jackson. In this series there were six cases apparently dependent on this cause. In a majority the focus of infection was in the tonsils, though in two, it was about the teeth. In every instance, after tonsillectomy or removal of the oral infection, there was a progressive improvement, with a disappearance of albumin and casts from the urine.

CASE 6.—Mrs. W. L. S., aged 32, white, complained of aching, loss of weight, and pain in the back and shoulders. Physical examination of the heart, lungs and abdomen was negative. The blood was negative. The systolic blood pressure was 110, the diastolic, 80. The urine showed a moderate trace of albumin, with numerous hyaline and granular casts. After a Mosenthal test meal for renal function, the urine showed a total output of 1,240 c.c., a normal variation in the specific gravity of day specimens. The specific gravity was inversely proportional to the volume of the specimens. There was diuresis after the first two meals; after the third meal, it was very slight. The night urine was small in volume, with high specific gravity. There was adequate salt elimination, and adequate nitrogen concentration in the night specimen. There was moderate fluid retention, and slight nitrogen retention. The salt concentration was low. The phenolsulphonephthalein output at the end of two hours was 30. The tonsils were small and fibrous, showing pus in the crypts. Treatment by dieting and rest for some months resulted in no improvement. Tonsillectomy eight months ago gave immediate relief from pain, with a gain of 20 pounds. The urine three weeks ago was absolutely normal.

The association of achylia gastrica with focal infections has been referred to by several observers, cases being reported by Beck and others. Every gastroenterologist has witnessed the improvement in many cases of this character, following the cure of oral sepsis. In this series there were six cases, all proved by the fractional method of analysis to be true achylias. In each there seemed to be considerable infection in the mouth, but in no other location. In some of the cases the extent of the infection necessitated the extraction of all the teeth. Without exception, improvement followed the cure of the oral sepsis. Free hydrochloric acid reappeared to some extent in every case, and in a few it finally reached the normal level.

CASE 7.—Mrs. E. T., aged 38, white, complained of loss of weight and strength, discomfort in the abdomen, gas and constipation. Physical examination of the heart, lungs and abdomen was negative. The blood and urine were negative. The Wassermann reaction of the blood serum was negative. The gastric contents by fractional analysis showed a total acidity of 12 at the end of one and one-half hours. There was no free hydrochloric acid throughout the test, which was carried on for two and one-half hours. There was no occult blood or lactic acid. Roentgenographic examination of the stomach, after a barium meal, was negative, except for hypermotility, the stomach being empty at the end of three and one-half hours. The patient had previously had several attacks of tonsillitis. The tonsils were recognized to be hypertrophied and infected. Under dieting and free hydrochloric acid, along with a modified rest cure, there was only slight improvement. Tonsillectomy was performed eight months ago, with immediate improvement in the patient's general condition, with a gain in weight and strength, and improvement in stomach symptoms. The last analysis of gastric contents, one month ago, showed free hydrochloric acid 12, and a total acidity of 20.

Vascular hypertension of moderate degree, indicated by a systolic pressure of from 150 to 170, occurred in 6 per cent. of the patients, all middle-aged persons, principally women. In these cases the condition was apparently not due to nephritis, because of the negative urine findings. There may, however, have been some chance of error, if we consider as a clinical entity the hypertension of the climacteric so well described by Reisman, and probably due to some endocrine dysfunction. In every case the hypertension seemed to resist all ordinary therapeutic measures, such as dieting, rest and vasodilators. Without exception, the infection was about the teeth, and on its cure there was a prompt reduction in the blood pressure, though it rarely reached normal.

While the report of the foregoing cases does not comprise all in which there has been a direct relationship or dependence on focal infection, others have occurred with rarity, and time forbids mentioning them.

Finally, a word must be said about joint conditions. No acute joint cases are tabulated in this series. There have been perhaps eight cases of chronic arthritis, usually of the type of arthritis deformans, with definite deformity and disability of many joints. An unsuccessful attempt was made to benefit these patients by curing foci of infection existing in the teeth, tonsils or sinuses.

CONCLUSION

While this report is necessarily brief, I hope it is sufficiently convincing to prove that often such conditions as pain, fever and headache are directly traceable to focal infections, and that the most effective measure for relief is complete eradication, or a cure.

Central Bank Building.

ABSTRACT OF DISCUSSION

DR. FRANK BILLINGS, Chicago: Focal infection as a cause of disease has come to stay. But, like every other principle in medicine, it has its limitations. Many of those who accept it have not thought of just what the term means. A focus of infection differs from a focal infection. A focus of infection may give rise to focal infection, or it may give rise to intoxication of the body. What is meant by infection? Infection means the invasion of the body by micro-organisms that have the power of reproduction in the host, of producing reactions within the tissues of the host, and the reaction producing abnormal phenomena, which we term clinical manifestations of disease. Focal infection means the invasion of the body

from a focus of pathogenic organisms, and these organisms have the power of reproduction or of multiplication within the host. Much of the fallacy and failure in the treatment or management of the patients who suffer from what may be proved to be focal infection is due to the fact that the surgeon or physician in charge removes a focus, which may be the right one, and then neglects any further management of his patient. And, if what I have just said is true, then the removal of the focus has not disturbed the organisms already in the tissues of the body. If you have removed the true focus, you have simply prevented the invasion of the tissues by additional organisms from the primary focus. Focal infection is usually an invasion by pathogenic agents of the tissues through the blood stream. They lodge in the tissues, they produce reactions, dependent on their character and on their virulence. They remain there if the defenses of the host are not sufficient to kill them or at least to drive them from the body. And unless, in the treatment of chronic infectious arthritis, for instance, that fact is borne in mind, the removal of the focus will usually not greatly benefit the patient, or at any rate not the majority of patients. Therefore, what is your duty? Our duty is to build up the resistance of the host against the invaders already there by all of the known means of support of the patient from the beginning of treatment. Can we use anything specific? The use of antigens in the form of dead bacteria, injected subcutaneously, in my experience, is not justified. I have used them all, controlling the work with all the knowledge we have, using the autogenous, the nonautogenous, the activated and the nonactivated. The controls got along just as well as those that had the vaccines given them them carefully. May one use some other specific? It is not uncommon now to read that a foreign protein antigen, injected intravenously, will restore the protective powers of the body, and drive out the pathogenic invaders. Apparently, many men have had success. But immunologists are not able to tell us much if anything of the modus operandi. It produces serious reactions, and we are using it in a haphazard way. The conscientious man is taking the health, and possibly the life, of the individual in his hands when he uses these substances. I do not say, do not use them, but I believe that we should approach that part of the treatment with judgment and discretion.

DR. JOSEPH H. PRATT, Boston: The subject of focal infections in its present day conception is very complex. There is much need of careful clinical study. Dr. Fontaine took a conservative position. A defect in most of the papers on this subject is that they give only the immediate results of removing foci of infection, but Dr. Fontaine has followed his cases for from one to two years, and the results are striking. I wish every physician in my section of the country could have heard the words just spoken by Dr. Billings, because the idea of focal infection, especially abscesses about the teeth, as a cause of chronic disease has spread like wildfire. At the present time many physicians, if they have an obscure case, simply advise the patient to go to a dentist and have the dead teeth removed. When this is done the patients are often turned adrift. Even living teeth may be extracted. The treament in cases of psychoneuroses may consist simply in the extraction of teeth or of a tonsillectomy. Last summer I saw a woman with a mild neurasthenia, without a symptom of chronic infection, who was sent by her physician to an oral surgeon, who according to the patient's statement was the leading authority in the state. Fifteen teeth were extracted. I saw the roentgenograms later and only eight of the fourteen teeth were dead! Her symptoms became more marked after the teeth were removed. Many of the chronic cases that drift from physician to physician are patients suffering from psychoneuroses, and while it is proper, of course, to treat the teeth if they are in bad condition, it is a mistake to consider that in these cases the discovery and removal of infected teeth constitutes proper diagnosis and treatment. If an infection has become generalized, removal of the local focus will not result in cure. In a rare case of recurrent thrombophlebitis under my observation for several years there was chronic antral suppuration. Treatment of the empyema was followed by improvement for about one year; then new thrombi formed. Careful examination has revealed no focus of infection outside of the inflamed veins, but every few months he has an attack of phlebitis with fever. Support from pathologists and immunologists is needed in solving the clinical problems connected with focal infection.

DR. FRANK B. WYNN, Indianapolis: In the olden days men were very prone in obscure cases to hide behind the liver; and a little later they found recourse in malaria to cover their sins of ignorance; and I wish to join with Dr. Pratt in emphasizing still further the point he made, namely, that the sin which we are very apt to commit at this time in regard to this matter of focal infection is that in cases with obscure symptoms we will hastily put the blame on the tonsils or on the teeth, without due clinical investigation of that case. It behooves us not to be content with looking at the tonsils or the teeth, but to search the body for other foci of infection. One other point is there which I wish to make, namely, that, granting the importance of a focus of infection, from which there is fed into the system the infectious material that gives rise in one case to rheumatic symptoms, in another to neuritis or to a neurosis, let us beware of the manner in which we proceed to correct that focus of infection. A patient had pain in the back, with tenderness, which was designated by her physician as lumbago. She unquestionably had bad teeth. On the advice of her physician they were extracted. In twenty-four hours following the removal of her teeth, she had severe pain throughout the whole extent of her spinal column, which rapidly developed into a typical spondylitis deformans. Undoubtedly, many of you have discovered bad tonsils, associated with the development of a chronic nephritis. You have removed the tonsils as the focus of infection, only to find that following the operation there has been an extreme aggravation of the symptoms, and in a few cases very disastrous results.

DR. W. S. THAYER, Baltimore: In dealing with many obscure conditions, looking for and properly treating a focus of infection, which may be a contributory cause of the trouble, we sometimes forget that our responsibility goes considerably beyond the point of finding a focus which may possibly be the seat from which the infection which has caused the trouble has come, and of considering its proper treatment. The attempt to treat these foci of infection properly has made common surgical operations which were not so common years ago; and it has brought into use certain specialties of surgical procedure which were not common years ago, surgical procedures of a very delicate character, which only the best trained man is capable of carrying out. I know many men whom I would be glad to have take out my appendix, if it were necessary. I know very few men who I would be willing to have take out an adherent tonsil or interfere with ethmoid disease. The proper treatment of ethmoid disease, and of gravely infected tonsils is often a serious matter. Those are very delicate procedures, which should only be done by very well trained surgeons. And there are relatively very few well trained surgeons in these special branches. It is our duty to consider very carefully to whom our patients are sent, and, furthermore, to follow them up afterward. The common treatment of the teeth in individuals whose trouble is supposed to depend on infection there is barbarous in the extreme. The reckless manner in which teeth are extracted today is a scandal to the medical profession. The very commonest infection in the mouth is probably gingivitis and pyorrhea alveolaris, which is not properly treated in the vast majority of cases. Very few dentists pay proper attention to pyorrhea alveolaris, and it is the duty of the physician to find one who does. I often do not know what to do when I have to refer a patient to some one for the treatment of such a condition. Dead teeth are opened and extracted on suspicion, simply because they are dead. Such a procedure is shameful. The extraction of a dead tooth, because it is dead, is unpardonable.

Often apical necroses are found in teeth, and those teeth are instantly extracted. In many instances that is an entirely wrong procedure. An apical necrosis does not at the moment often mean a very grave infection. Very often it is easy to

treat the condition without extracting the teeth. A sufficiently free opening, with curetting, and amputation of the root, done by a skilful man, will save many teeth which are today sacrificed recklessly. When we send a patient to a dentist to have his teeth extracted, it is not only necessary to see that he is properly cured, but it is unfortunately necessary very often to watch the patient to see that he himself treats the cavities properly. I know dentists of the highest reputation in their communities who extract a tooth, curet well the socket and then dismiss the patient; and I have on more than one occasion met such a patient several years later, and found that he had suppurating cavities, the necrosis still continuing, well closed in, simply because the cavity had not been properly treated.

DR. LEON L. SOLOMON, Louisville, Ky.: It were well for us, in searching for the primary focus of infection, to search the lower part of the gastro-intestinal tract, more particularly the lower part of the colon, the sigmoid and the rectum for a secondary, as well as for the primary focus. It has been my observation that the colon, the sigmoid and the rectum often contain an old focus of infection which is responsible for the means of ingress into the body of infecting organisms.

DR. CARLETON DEDERER, Bay City, Mich.: This subject is in the experimental stage. However, I want to place the weight of my influence on the side of the enthusiast rather than on the side of the conservative. My method of treating surgical patients consists in making a general rigid physical examination first. In all cases in which a major operation, such as a cholecystectomy, is done, I always, if the patient consents, eliminate the minor foci in the teeth and in the tonsils, if they appear to show infection, before I remove the other foci of infection.

DR. BRYCE W. FONTAINE, Memphis, Tenn.: The diagnosis of focal infection is made reluctantly, not until every other means of arriving at the cause in these cases has been exhausted, and then only with the cooperation of other men, who are conservative and especially skilled in their several lines. These end-results have been carried over two years, and during this time there has not been a return in one of the cases reported.

Clinically Trained versus Laboratory Trained Observers.—Many valuable signs are only perceptible to the trained eye or the trained ear or the trained finger. Still more valuable signs are only revealed by the sensations experienced by the patient. To interpret these requires a training that can only be acquired by many years of patient observation, during which the mind is stored by the experiences of the past, by methods which are peculiar to medicine. These methods can never be acquired by a laboratory trained observer, and it is because of this that men trained in the laboratory fail as clinical investigators, however distinguished they may be as physiologists, chemists, or bacteriologists.—J. MacKenzie, *Brit. M. J.* **1**:109 (Jan. 24) 1920.

VIRULENCE OF DIPHTHERIA BACILLI FROM DIPHTHERIA PATIENTS AND FROM CARRIERS

THE RESULTS OF FIVE HUNDRED AND FORTY-EIGHT TESTS *

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During the last four years we have found it necessary to test the virulence of cultures that have been obtained from convalescent and from contact carriers, and also those from a group of persons who have been classified as noncontact carriers. We have found these virulence tests helpful in distinguishing the nonvirulent from the virulent diphtheria bacilli, and thus have been able to authorize the release of patients when virulent diphtheria bacilli are no longer present in the secretions.

When the laboratory first undertook to make these tests, health officers and physicians were eager to send cultures in the hope of securing the release of their patients or carriers from quarantine. In fact, they chose to send cultures to the laboratory for virulence tests rather than to undertake the strenuous task of getting the patients to rid themselves of the cultures by mouth-cleansing and other general measures of personal hygiene, all of which are either generally disregarded or are not very carefully carried out.

TESTS OF VIRULENCE OF B. DIPHTHERIAE FROM CONVALESCENTS AND FROM CONTACT AND NONCONTACT CARRIERS

	Duration Less Than 3 Months			Duration More Than 3 Months			Duration Not Known			Total		
Tests Made Prior to 1916:	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.	No. Tests	No. Vir.	Per Cent. Vir.
Convalescent carriers	159	144	90.0	2	2	100.0	...	..	....	161	146	90.6
Contact carriers	20	16	80.0	..	..	....	...	..	....	20	16	80.0
Noncontact carriers*	32	3	10.0	1	0	....	...	..	....	33	3	8.3
Total number of tests prior to 1916	211	163	77.2	3	2	....	...	..	....	214	165	77.1
Tests Made from January, 1916, to April, 1919:												
Convalescent carriers	147	136	92.5	28	25	89.2	44	30	68.1	219	191	87.2
Contact carriers	35	28	80.0	9	8	88.8	51	33	64.7	95	69	72.6
Noncontact carriers†	12	10	83.3	2	1	50.0	6	4	66.6	20	15	75.0
Total number of tests, 1916-1919	194	174	89.6	39	34	87.1	101	67	66.3	334	275	82.0
Combined total	405	337	83.2	42	36	85.7	...	..	....	548	440	80.4

* These noncontact carriers were carefully classified as carriers when there was no diphtheria.
† These noncontact carriers could not be so accurately classified.

VALUE OF ROUTINE VIRULENCE TESTS

At first, the task of making these virulence tests was an arduous one. Nevertheless, tests were made during a period of two years with 250 strains of the diphtheria bacillus. To determine the value of these routine virulence tests, Dr. W. E. Youland, of the laboratory staff, tabulated the results. He found that 90 per cent. of the strains of *B. diphtheriae* that were isolated from cases of clinical diphtheria, from the day of onset to and including one year after onset, were virulent for guinea-pigs. Eighty per cent. of the strains isolated from a smaller series of healthy contact carriers who acquired the bacilli during epidemics were virulent,[1] while only 10 per cent. of the strains isolated from noncontact carriers were virulent. The noncontact

* Read before the New York State Medical Society, Syracuse, N. Y., May 8, 1919.
* From the Division of Laboratories and Research, New York State Department of Health.
1. Diphtheria Carriers, New York State Department of Health.

carriers of this series were persons in state institutions or schools where there were no cases of diphtheria, who, nevertheless, carried diphtheria bacilli in their secretions. Ninety per cent. of the cultures that were obtained from convalescent patients during the first three months after the onset of the disease and from contact carriers were virulent. It was thus possible to discontinue a large part of the work, namely, the examination of convalescent and contact carriers during the first three months after the onset of the disease.

But physicians and health officers, who are deeply concerned for the release of their patients, have very naturally been impatient at this delay. In order to avoid making any unnecessary hardship for these carriers, it has been customary to make examinations whenever the health officer thought there were special reasons why he should have such a test made and stated his reasons clearly. Thus a considerable number of virulence tests have been made since the previous tabulation, and it is thought that it might be of interest to record the results of these examinations.

The tabulation of this series includes 334 virulence tests that have been made from January, 1916, to April, 1919. The classification of noncontact carriers is nondescript and not as reliable as that in the previous study of noncontact carriers on account of the fact that it was impossible to get complete and reliable information from all the physicians who sent these cultures to the laboratory. The results of this tabulation are presented in the accompanying table. The results obtained in the tabulation of the first series are included for the purpose of comparison.

When the results obtained with cultures from convalescent carriers in whom the duration of infection is less than three months are examined, it is found that of 147 strains of *B. diphtheriae*, 136, or 92.5 per cent., are virulent. This agrees closely with the results obtained in the first series, in which 90 per cent. of the strains were virulent. In the same period, from healthy contact carriers, twenty-eight strains of diphtheria bacilli out of thirty-five strains tested, or 80 per cent., were virulent; 80 per cent. was also obtained for these contact carriers in the first series.

The percentage of virulent diphtheria bacilli from convalescent carriers of more than three months' duration, 89.2 per cent., agrees closely with 92.5 per cent., obtained in cases of less than three months' duration. The number of examinations made on contact carriers in this period, nine, is too small to be of any significance.

CONDITIONS AFFECTING STATISTICAL VALUE OF RESULTS

The number of cases, 101, in which the duration of the disease was not stated on the information blank renders the results of these examinations for virulence unavailable for statistical study. Similarly, the results obtained for noncontact carriers are of little value since the information describing the cases as noncontact was often unreliable.

In both series, 398 cultures from convalescent and contact carriers in which the duration of the infection is known were studied. Three hundred and fifty-seven, or 89.7 per cent., of these were virulent. When the total number of tests for virulence (548) are examined without attempt to classify the cases on which the tests were made, it is found that 440, or 80.4 per cent., are virulent.

CONCLUSION

It is evident that *B. diphtheriae* from persons who have had diphtheria or from those who through contact become "carriers" retains its virulence for several months. Changes in virulence or changes in species or strains of the diphtheria organisms take place so slowly in the throat that the three months' period required before making these virulence tests is, after all, a lenient ruling and a satisfactory one if, in special instances in which carriers are definitely known to be noncontact carriers, a virulence test is made without delay.

ABNORMAL LACTATION

A CAREFUL STUDY OF THE LITERATURE, WITH THE REPORT OF A CASE *

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Lactation, the coping stone of motherhood, is a function sometimes impossible, often intentionally or ignorantly neglected, and in many instances practiced to excess.

In women of high social standing, the last mentioned condition is practically unknown. Investigations show that among women of the poorer classes, and particularly among the tribes and races of ignorant and uncivilized peoples, prolonged lactation is common. This is much to be regretted, as it tends to produce depletion of the mother with symptoms of "tabes lactealis," and poorly nourished babies.

TIME

Normally, nine months is considered the proper period for a mother to nurse her child. Under prolonged lactation would come cases in which maternal nursing, wholly or partially, has been indulged in longer than twelve months.

When lactation exceeds a period of two years, it is, however, permissible to speak of it as "abnormal mammary secretion," as the child, obviously at this time, has become independent of the milk supply of the mother; yet it is an altogether common occurrence to see lactation intentionally prolonged indefinitely, sometimes exceeding forty years (Cazeaux [1]). In the ethnographic work by Ploss [2] we find that this unnatural custom is found among all the races of the globe. Gellhorn,[3] in his travels in Siam, reports that he has repeatedly seen a boy of 6 or 7 interrupt his play, or put his palm-leaf cigaret behind his ear, and return to his mother's breast and take a sip of refreshment. Among the poorer classes this habit is often induced by economic reasons, but sometimes, also, as a matter of convenience, since it pacifies the child with the least disturbance to the mother. Then, the popular belief that lactation prevents conception is also a potent factor in producing this custom. Jacobi, many years ago, stated that "lactation and pregnancy are incompatible," but this statement is far from being universally accepted.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. Cited by Noel: Echo méd. de Cévennes, 1901, p. 207.
2. Ploss and Bartels: Das Weib in der Natur und Völkerkunde, Ed. 6, Leipzig, 1899.
3. Gellhorn: Medizinische Reise-Erinnerungen an Siam, Deutsch. med. Wchnschr. **25**, No. 9, 1899.

LACTATION AND CONCEPTION

Weinberg [4] states that conception occurred during the first six months after childbirth in only 1.2 per cent. of 513 nonmenstruating women nursing their children, and in 59.5 per cent. in 615 who were not nursing.

Fordyce [5] reports that out of 645 cases, 22 per cent. were cases of prolonged lactation. The same author [6] states that overlapping pregnancy and lactation occurs in 24 per cent. of mothers, and may, obviously, exist for some time without being suspected. Only too often in such cases, it is found that after the birth of the child the mother is quite unable to nurse satisfactorily for any length of time, as the milk is usually poor in quality and insufficient in quantity.

Fordyce [7] conducted an observation on 100 mothers who had given birth to 405 children (twins in five cases); of these, 376 infants survived at least two months. In 259 (69 per cent.), the children were nursed at the breast for at least two months, and therefore in these 259 cases there was a possibility of pregnancy or menstruation coexisting with lactation. In these cases the duration of lactation averaged ten months. In six cases the condition as to menstruation was not ascertained. Of the 253 remaining cases of lactation in which this point was determined, in 60 per cent., there was complete amenorrhea, while in 40 per cent. menstruation occurred.

From every point of view, prolonged lactation is unsatisfactory. The risks are real, and the compensating advantages only illusionary.

I am emphatic in the belief that along with the constant reiteration of the command for maternal nursing there is the very important obligation of advising a strictly limited lactation. While my personal figures are comparatively small, my findings concur with those of other observers, and lead to the deductions that:

1. The concurrence of pregnancy and lactation is comparatively common.
2. Conception is rare within the first six months of lactation, and uncommon before the eighth month.
3. When pregnancy and lactation overlap, both the fetus and the mother are likely to suffer.

EFFECT ON BABIES

Fordyce [7] studied 300 children with regard to rickets and prolonged lactation, and found that rickets was more common among children who were breast fed for over eight months than among other children. This he attributed to the natural variations in the composition of mother's milk, not only in different individuals, but in the same individual at different times.

While no one questions that, where practicable, maternal nursing, when properly regulated, is the best and only method of procedure for the good of both mother and child, one must, however, not lose sight of the evil consequences of overlapping pregnancy and lactation, and prolonged lactation. Such conditions foreshadow a diminished value of the milk in future lactations, and consequently form a serious handicap in the natural nutrition of later infants.

CAUSE OF PELVIC INFLAMMATION

Fordyce also reports that prolonged lactation is a cause of pelvic inflammations.

Walsh,[8] who made an extensive study of prolonged lactation, states that the deleterious effects of this practice are more noticeable in women physically below par, and that they suffer from serious disturbances—circulatory, digestive and nervous; that the endometrium, as well as the muscular structures, partake of the general debility; that they suffer metrorrhagia from relaxation of the capillaries, and, that leukorrhea usually accompanies their other symptoms.

Lawson Tait asserts that prolonged lactation is the cause of a large number of cases of subinvolution of the uterus; and, further, that "in the majority of cases, one might almost say that in ninety-nine out of every 100 cases, chronic endometritis is accompanied by, and is indirectly due to, subinvolution of the uterus, following labor or miscarriage."

Skene mentions this as predisposing to endometritis, and reports a case of a woman who nursed her child for eighteen months and who, in consequence, suffered from cervical endometritis.

Thomas also mentions it as a cause of chronic cervical endometritis.

Marion Sims [8] says that metrorrhagia may result from superlactation, but that such cases are not common and usually not obstinate. He mentions eight cases of metrorrhagia due to this cause. The period of suckling varied from sixteen to twenty-four months.

Johnston [9] reports the occurrence of mammary secretion, accompanied by certain rational signs of pregnancy, in two nonpregnant women. One of these patients had retroflexion of the uterus. When this was corrected the secretion of milk ceased.

Stewart [10] reports the case of a woman who was secreting milk from her right breast six years and four months after delivery. The child was not nursed on account of insufficient secretion and too short nipples. A plastic operation, and one for retroflexion, had been performed after confinement. The pelvic organs were otherwise normal. The breasts were small and had enlarged milk ducts.

Grünbaum [11] cites two cases of hysterectomy with ovariotomy in women of child-bearing age, one being a multipara. These women had secretions of milk following the operation for from eleven to seventeen days. He reviewed twenty-one cases of similar nature.

Dassier [12] noticed in climacteric women, secretion of milk following mastitis.

These cases lead to the very interesting question of the activity of the breast due to pathologic conditions. Tumors of the breast may be left out of consideration. We are here merely concerned with affections of the genital sphere.

Gellhorn has observed in the University Clinic, Bern, fourteen cases of mammary secretion in sterile women who exhibited uterine fibroids. He also found colostrum in the mammae in twenty-five out of forty-four cases of fibroids. He believes that the alteration of the blood by the uterine tumor causes the mammary symptoms. Irritation of the uterus by a strong galvanic current failed in his hands to cause milk secretion. He excludes reflex through the nervous system.

None of these authors endeavor to explain why the uterus is thus affected.

Sinclair [8] offers this explanation: During pregnancy, the breasts are undergoing a change to prepare them for the purpose of lactation. Immediately after

4. Weinberg: Ztschr. f. Geburtsh. u. Gynäk. 1903.
5. Fordyce, A. D.: Brit. J. Child. Dis. **3**: 302-304, 1906.
6. Fordyce, A. D.: Lancet, Jan. 27, 1906.
7. Fordyce, A. D.: Lancet **84**: 221, 1906.
8. Virginia Med. Month. **18**: 1001-1007, 1891-1892.
9. Johnston, G. W.: Am. J. Obst. **21**: 830, 1888.
10. Stewart, D. H., cited by Jacobius: Arch. f. Kinderh. **48**: 1-160.
11. Grünbaum, D.: Milchsekretion nach Kastration, Deutsch. med. Wchnschr. **33**, No. 26, 1907; abstr. J. A. M. A. **49**: 976 (Sept. 14) 1907.
12. Dassier, cited by Noel: Echo méd. de Cévennes, 1901, p. 207.

delivery, there is an acceleration of this process, which is generally completed in from three to four days. Stimulation of the breasts by nursing at this time exerts a powerful influence in causing contraction of the uterus. Then, if lactation is gradually stopped, reevolution of the sexual functions becomes gradually complete; but if lactation has been carried to excess, it is natural to expect that it has exerted a greater than normal influence on the sexual organs. And when lactation is suddenly stopped, it is reasonable to suppose that the final stage of evolution will be more rapid than usual and attended by some unusual phenomenon. But this does not explain why the uterus suffers in prolonged lactation. Besides the uterus, other organs are affected.

Microscopic researches have shown that in all forms of true secretion, the active agents are cells which have the power of selecting from the blood the requisite materials; these cells, developed in the interior of the organ, become distended, burst or liquefy, and yield their contents to the excretory ducts.

In the mammary glands, as in other glandular structures, according to Goodsir,[13] the inner surfaces of the ultimate milk follicles are covered by a layer of epithelial cells, the true agent in the process of secretion. As soon as one set of cells has emptied its contents, the cells die and are replaced by a new set of cells from the nuclei of the germinal cells of the follicles.

Bird[13] obtained evidence that this alteration commences in the blood, and goes on during pregnancy as a preparation for lactation. The evidence is through the presence of kyestein (which is nearly related to casein) in the urine during pregnancy, indicating the conversion of albumin into casein of the blood, and preventing its accumulation in this fluid before it is secreted by the mammae by this curious substance in the urine.

If these results are true, it does not seem so very strange that the secretion of milk cells should be permanent, under favorable circumstances, which cannot at present be specified, any more than that the secretion of the urine or bile, once commenced, should be permanent. The secretion of milk, abnormally continuous in the foregoing case, may be only a transfer of the office of freeing the system of nitrogen by the usual agents, the kidneys, to the unusual one, the mammae, which remove it by casein instead of by urea, from idiosyncrasy, the former being permanently formed in the blood.

Channing[13] reports two cases of prolonged lactation lasting four and eight years; but the secretion of urine was not studied in them.

Coale[13] deemed the analysis of the urine desirable and important, in such cases.

NEW-BORN

Billroth[14] states that in a tolerably large number of cases of such tumors, he has never witnessed a coincidence with abnormal milk secretion. The occasional occurrence of milk secretion of the new-born of either sex is sufficiently known, but satisfactory explanation has not yet been given.

Steifensand[15] was the first to call attention to the fact that, in the new-born, all glands exhibit pronounced activity.

Basch[16] ascribes the phenomena to the welling up of the secretion to the surface, thereby loosening the hornified epithelium which clogs the orifices of the milk ducts.

Bumm[17] says that the skin of the new-born is very sensitive and responds to the influence of air and light by reddening and exfoliation of the uppermost layers of the epidermis. This irritation is also the cause of the mammary secretion.

Longridge[18] finds that in large children with an abundance of subcutaneous fat, the breasts are normally well developed irrespective of sex, and on pressure often secrete a fluid indistinguishable from milk.

Starling[19] and Lane-Claypon state that there is a chemical factor in the body of the fetus, analogous to the one acting on the mother's breasts.

Halbau[20] concludes from his researches that pregnancy produces local phenomena in the fetus, which are identical with, though not so intense as, those in the organism of the mother. In a later study he attributes the causation of this mammary hypertrophy to an internal secretion of the placenta. He is of the opinion that the etiology of mammary secretion has nothing to do with the fetus, but is due to the internal secretion of the ovary; in pregnancy the function of the ovary is temporarily assumed by the placenta. In exceptional instances, lacteal secretion takes the place of menstruation.

CAUSE OF EYE AND BRAIN DISORDERS

Some report resultant eye and brain disorders. McKenzie[8] was the first British writer to call attention to the effect of prolonged lactation on diseases of the eye. He described a case of retinitis due to this cause. It is usually bilateral.

Taylor[8] stated that the injury may extend from a slight impairment of vision to a total loss of sight.

The brain is also seriously affected, and epilepsy is known to have developed. Luke[8] mentions two cases of insanity as a result. Similar cases are also cited by Hewitt and Ashwell.[8] Morton[21] reports twenty-two cases showing inflammation of the brain and its membranes occurring in children in consequence of prolonged lactation.

Duval[22] speaks of nonpuerperal mammary secretion and gives as causes: (1) menstruation; (2) tumors of the breasts; (3) affections of the utero-ovarian apparatus; (4) mechanical or psychic stimuli independent of any material modification of the organ, and (5) cases occurring after the menopause.

Spark[23] reports a serious case of galactorrhea with emaciation, anorexia, disturbed digestion, etc. It took four months to stop it. Abscesses had occurred in two successive confinements. Previous to the third confinement, extract of belladonna and glycerin were applied to the breasts every third night for a week. Milk appeared slightly for a day or two at the end of the week, and then discontinued.

Jacobius[24] was able to revive nursing in from three to twenty-six days after it was discontinued, by using

13. Am. J. Med. Sc., N. S. **23**: 110-112, 1852.
14. Billroth: Diseases of the Female Mammary Glands, in Cycl. Obst. & Gynec. **9**: 44, 1887.
15. Steifensand, cited by Knapp in F. von Winckel's Handbuch der Geburtshülfe, 1904, II, Part 1, p. 163, 1845.
16. Basch. Beiträge zur Kenntniss des menschlichen Milchapparates, Arch. f. Gynäk. **40**, No. 1.
17. Bumm: Grundriss zum Studium der Geburtshülfe, Ed. 2, 1903, p. 271.
18. Longridge: J. Obst. & Gynec. Brit. Emp., March, 1908, p. 165.
19. Starling, E. H.: The Chemical Control of the Body, J. A. M. A. **50**: 835 (March 14) 1908.
20. Halbau: Ztschr. f. Geburtsh. u. Gynäk. **3**: 191, 1904.
21. Morton: London M. & Phys. J., 1888-1889.
22. Duval: Cited by Johnston (Footnote 9).
23. Spark, J. S.: Brit. M. J. **2**: 653, 1878.
24. Jacobius: Arch. f. Kinderh. **48**: 1-160.

a rubber nipple attached to a rubber tube, which the mother sucked. This was effective treatment with many patients that never nursed a child, not even during the puerperium.

CASES OF PROLONGED LACTATION

Mention will be made of some interesting cases:

Mrs. E. B., aged 31, born in Chicago, with unimportant family history, gave birth to a child eleven years ago, and had an extra-uterine pregnancy of five and one-half months' duration, three years ago. Both breasts have secreted rich, creamy milk since the birth of the child eleven years ago. (For complete report, with unique surgical complications of this case, see: Seifert, M. J.: Ectopic Gestation, *Internat. Clin.* Series 30, 2, 1920.)

Arnheim [25] reported a case of a woman of twenty-six who had been confined four years before, and since then had had a profuse mammary secretion that resisted all known methods of treatment.

Kneeland [13] reported a case in a woman of 35, who gave birth to a child five years before. She nursed it until it was 2 years old, when it died of chronic hydrocephalus. Her husband died when the child was 2 years old. Milk secretion was very profuse, and although not pregnant again, she secreted milk in abundance five years after the birth of the child.

Walsh [8] reported a case in a colored woman of 23; her first child was 5½ years old, whom she had nursed for two years. Her breasts had not been dry since, and she had been accustomed to milk herself two or three times daily. Three years before, she had an abscess of the breast, and a year later, miscarriage followed by dysmenorrhea. Her breasts were large and filled with milk, which could be expressed on the slightest pressure. Belladonna, turpentine and strapping were tried, but milk continued to secrete in spite of treatment.

Nikolski [26] reports a case of a woman of 31, delivered of a child five years before, who lived but a short time. She continued to secrete milk to date.

Edelberg [27] reports a case in a widow of 27 who married at 18, and had never menstruated. She had irregular menstruation after marriage. Four years later she became pregnant, menstruation ceased, and she was later delivered of a healthy child. There was no menstruation for eleven months, whereupon it again became irregular. No further pregnancy occurred, but there was copious secretion of milk six years after the birth of the child. The patient lacked in sex sense. No gynecologic examination could be obtained.

Clarke [28] reports a case of a mother who nursed her child for five years and two months. She menstruated only twice during this period. On a physician's advice the child was weaned, and the milk secretion soon stopped.

Cheinisse [29] cites a case of latent lactation, with anemia and debility, two years after the weaning of the child. Milk was secreted, but expressed only on pressure.

Beltz [30] reports a case of latent lactation four years after the child was weaned. The secretion increased at menstrual periods, but was obtained only on pressure.

Dr. Ellittson cites a case of a woman who secreted milk after miscarrying at seven months; then, another, who had never been pregnant. He also cites a case of a young woman who suffered from dysmenorrhea as a result of ovarian trouble. She had never been pregnant, but had mammary secretion of milk.

EXTRAORDINARILY PROLONGED CASES

There are several cases on record of extraordinarily prolonged lactation.

Kamneff [31] reports a case of thirty-two years' duration. Cazeaux [1] describes the case of a woman in whom an abundance of milk was secreted for forty-seven years.

Siegart [32] quotes cases of five grandmothers who had borne from nine to seventeen children of their own and nursed each one for two years, as well as suckled their grandchildren—one of these for more than twenty-two years, and twelve of the children for 280 months. In spite of unfavorable social and economic conditions, there was not a case of rickets among them, and only one of these children died in early infancy.

Landau [33] quotes Billroth regarding a woman, aged 82, whose breasts were functionating. The same author removed the ovaries in a woman, aged 29, who later on developed milk in her breasts without pregnancy. He also cites a case of a woman, aged 24, whose milk in one breast was sweet, and in the other salty. The child refused nursing. Chemical analysis was not obtained.

VIRGINS

The occurrence of copious lacteal secretion in the virgin was noticed and discussed by the illustrious father of medicine. His observations have since been periodically added to by records of new cases, in all ages down to our own.

The American physiologist Dunglison emphasized the fact that very active and copious lactation may be present without previous impregnation, "for it has been witnessed in the unquestionable virgin, in the superannuated female, and even in the male sex."

Knott [34] cites three cases of nurse girls who were entrusted with the care of infants for the night. In order to quiet the babies, they allowed them to play with their breasts and suckle their nipples. Increased sense of fulness and warmth was followed in a few days by copious secretion of milk. It promptly yielded to simple treatment of belladonna externally and internally. Another case of a girl of 8 who suckled her infant brother for a month was recorded by the French obstetrician Baudelocque.

LeRoy [35] mentions an African Jewess, with a history of marked nervousness in the family, but no stigmas, who menstruated at 10 and developed secretion of milk in considerable quantity. At 23 she developed symptoms of mania and was placed in an institution in Paris. The breasts were well developed, but the nipples absent, so that in this case the secretion could not be attributed to a stimulation, from the suction of nipples. There was extreme erotism in her talk, and she was proud of her anomalous function.

Noel [36] mentions the case of a young married woman who had never had sexual intercourse. She was called

25. Arnheim: Transactions of the Medical Society of Hamburg, Deutsch. med. Wchnschr., 1908, p. 445.
26. Nikolski: Russk. Vrach **20:** 178, 1899.
27. Edelberg, F.: Russk. Vrach. **21:** 57, 1900.
28. Clarke, H. R.: Brit. M. J. **1:** 1143, 1902.
29. Cheinisse, L.: Semaine méd. **24,** No. 28, 1904.
30. Beltz: Bull. Soc. méd. Rheims, 1876.
31. Kamneff: Russk. Vrach **20:** 450, 1899.
32. Siegart, F.: München. med. Wchnschr. 1903, p. 1349.
33. Landau, T.: Deutsch. med. Wchnschr. **16:** 745-747, 1890.
34. Knott, John: Am. Med., N. S. **2:** 373-378, 1907.
35. LeRoy, R.: Tribune méd., N. S. **63:** 7, 1910.
36. Noel: Echo méd. de Cévennes, 1901, p. 207.

on to care for an infant 6 months old. To quiet it, she took it to her breasts, and secretion soon followed.

Blum [37] reports the case of a girl, aged 17, with two developed mammae in their normal places, who had in the region of the mons veneris a third mamma, the size of a goose egg, with seven nipples. Four of these secreted regularly a copious amount of colostrum before and during the first day of menstruation. The two normal mammae did not secrete at all.

VIRGIN ANIMALS

These references are also corroborated by animal breeders. Virgin sheep, dogs and rabbits have occasionally been found to secrete milk.

Harvey [38] states that overfed female dogs which admit the dog without fecundation following steal away the whelps of another female dog, tend and lick them, and fight fiercely for them. Others have milk and colostrum in their teats, and are subject to diseases of those that have whelped.

Noel [36] cites the case of an ape confined in a cage, an unquestionable virgo intactu, which developed secretion of milk in her teats by occasionally rubbing them. It lasted nine months, and reappeared at intervals. This author also cites several instances in which women were able to nurse after an interval of four months.

PHANTOM PREGNANCIES AND VICARIOUS MENSTRUATION

Gellhorn [3] cites several cases of phantom pregnancy with mammary secretions. These were due, either to the desire or the fear of pregnancy, and in one case to the sight of milk secretion.

Pusch and Courty [39] collected twenty-six instances in which there was vicarious menstrution.

Landau [33] and Gautier [40] report a similar case; the latter, that of a virgin.

SUPERANNUATED FEMALES

Turning our attention to the superannuated female, Dr. Gordon Smith refers to a manuscript by Sir Hans Sloane containing the record of a woman of 68 who had borne a child more than twenty years before, and who had nursed all her grandchildren, one after the other.

Professor Hall of the University of Maryland reports the case of a widow, aged 50, whom he had witnessed nursing her grandchildren, although she had not borne a child of her own for twenty years. In this case the child was put to the breast to quiet it, in the process of weaning.

Dr. Francis of New York narrated a case of a woman who for fourteen years after the birth of her child secreted milk in great abundance.

Dr. Kennedy of Ashby de la Zouch has described the case of a woman who menstruated during lactation, suckled children through the full course of forty-seven years, and in her eighty-first year had a moderate but regular supply of milk, rich and sweet, and not differing from that secreted by young, healthy mothers.

Stack [41] tells of a woman of 64 who had not borne a child in sixteen years, but nursed her grandchildren, one after the other.

37. Blum: München. med. Wchnschr., May 21, 1907, No. 9.
38. Harvey, cited by Edgar: Practice of Obstetrics, 1903, p. 484.
39. Pusch and Courty, cited by Henning: Zentralbl. f. Gynäk., 1908, No. 18, p. 601.
40. Gautier: Lyon méd., 1903, p. 199.
41. Stack: Phil. Tr. cited by Knott (Footnote 34).

LACTATION IN THE MALE

Finally, I will mention the still more anomalous phenomenon of lactation in the male.

Knott [34] tells of Professor Hall exhibiting to his obstetric class in 1827 a colored man, aged 55, who had large, soft, well formed mammae, rather more conical than those of a female, and projecting fully 7 inches from the chest, with perfect and large nipples. The glandular structure was in every respect like that of a female. This man officiated as wet nurse for his mistress, and when the milk was no longer required, great difficulty was experienced in arresting the secretion. His genital organs were fully developed.

There has been cited [42] the case of a man about 70, who was left a widower with an infant, aged 2 months. He took the baby to his breast and soon secreted enough milk to rear him. His breasts were large—larger than those of some women.

Knott [43] cites the case of a Chippewa Indian, who also was left a widower with a young infant. He cared for him as a mother would, his breasts began to secrete milk, and he raised the child.

Dorland states that it is not at all uncommon among the men of the lower classes of Siam to nurse the babies, either altogether or alternately with the mothers.

Cases of male domestic animals have been cited [42] whose breasts secrete milk in abundance.

SUMMARY AND CONCLUSION

We have seen, in the foregoing, that lacteal secretion not only occurs during pregnancy and the puerperium, but also may appear in the new-born, in the growing child, in the adult virgin, in the old woman, and in the male.

It may be prolonged indefinitely after childbirth, and may be associated with certain pathologic conditions in the genital sphere, as well as after hysterectomy and ovariotomy.

Aside from the intense scientific interest in the etiology of lacteal secretion, which is still obscure, there is also considerable practical importance attached to abnormal activity of the mammary glands, and a thorough knowledge of the atypical functions of these organs is indispensable to the expert in medicolegal practice.

The inference is: Most mothers could nurse their babies if, instead of shirking, heeding false advice, or taking galactagogues, they would stimulate their breasts by normal methods.

30 North Michigan Avenue.

ABSTRACT OF DISCUSSION

Dr. William Kohlmann, New Orleans: Dr. Seifert has collected all the literature and at the same time brings out some points on the practical facts of lactation. He has shown that the secretion of milk takes place not only during pregnancy, but under other conditions. We have all seen a woman who either wishes or is afraid to be pregnant and yet secretes colostrum, if not milk. During inflammatory conditions of the uterus, milk secretion may not be very frequent. I operated on a woman five years ago following infection of childbirth. She had to be operated on again last fall because of infection. Immediately after recovery she was secreting milk and did so for about two weeks. From the medicolegal aspect this is important. It could be brought up that a woman was pregnant because of the presence of

42. Phil. Tr., cited by Knott (Footnote 34).
43. Knott, cited in Dr. Richardson's Journal.

milk in her breast. I wish to emphasize two points: first, the hypersecretion of milk, and, second, protective secretion of milk. Hypersecretion of milk is to be spoken of if the secretion exceeds two pints a day. Ordinarily, a woman secretes half a pint a day. Of course, there are women who secrete a great deal of milk and can nurse several babies, especially twins. Unfortunately, many women who have a chronic disease, like tuberculosis, are inclined to secrete a great deal of milk. To let her continue to secrete milk without attempt to stop it would interfere with the health of the woman, and milk of that kind is no doubt unhealthful and may be followed by complications of the digestive organs of the child. There seems to be a decrease of mothers who are able to nurse their children. Unfortunately, there is little we can do to stimulate the secretion. The only thing we can do is to regulate the general health and to try to increase the secretion of milk. We should try to increase the flow of milk because the child will do much better when nursed by the mother than to be fed by artificial means.

PROLAPSE OF THE FEMALE URETHRA*

RICHARD R. SMITH, M.D.
GRAND RAPIDS, MICH.

My object in presenting this paper is to call attention to the condition designated by its title, to describe it and to offer a simple means for its correction. I hardly need say that so-called bladder symptoms are among the most annoying of all the discomforts that

Fig. 1.—Diagram of operation on meatus itself. This is done for the purpose of narrowing a dilated orifice and restoring normal protection to the urethral mucous membrane.

arise from childbirth injuries. We have recognized that they are due directly, though perhaps not entirely, to the loss of integrity of structures anterior to the vagina which have intimately to do with the support of the bladder and the urethra. In general these injuries are more important than the prolapse of the posterior wall and rectocele which follow the separation or tearing of the levators. But far more consideration has been given to the perineum and its repair than to the defects in these anterior structures. It would be difficult to understand why the condition to be described has not received earlier attention, and even today is so commonly overlooked, if we did not realize that cystocele and its associated lesions have only recently received the attention they deserve.

When a woman comes to us complaining of frequent and perhaps painful urination, together with more or less constant discomfort in the region of the bladder, or of other symptoms associated with the act of micturition, we systematically examine the bladder and upper urinary passages for a cause of the trouble, which we think of largely in terms of infection. At the same time we look for mechanical defects. If we find a cystocele we are likely to consider this the extent of the mechanical trouble and offer its surgical correction as a means of relief.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

In making such an examination we note and consider the extent of the cystocele, the position and condition of the uterus, and the integrity of the perineum and posterior vaginal wall. We are likely, however, not to inspect thoroughly and examine the meatus urinarius. With the patient on her back and relaxed,

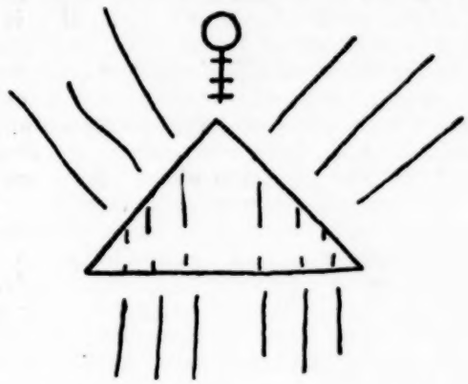

Fig. 2.—Denudation and suturing of anterior vaginal wall above meatus. After obtaining a good hold on the forward edge of the mucous membrane, a rather deep bite is taken into the firm tissue beneath the pubic bone, care being taken, of course, to avoid the urethra. When tied, the meatus is drawn upward and its normal protected position restored.

the meatus and anterior vaginal wall close to it protrude but little, if any, whatever the condition present, and are likely to be regarded as quite normal. Ask the woman to strain, however, and if there has been an injury at this point the meatus and the anterior vaginal wall back of it bulge forward and roll upward, bringing them into marked prominence.

Close observation will not infrequently disclose an edema of these structures. Most important is the condition of the meatus itself. The mucosa at the lower end of the urethra is seen to roll slightly out of the meatus, exposing to view a bit of the tender lining of the canal. The meatus may be found to be larger than usual, its two small lips torn or stretched and offering a very imperfect covering for the sensitive membrane within. The mucosa is not infrequently the seat of a so-called caruncle, which is sometimes exquisitely sensitive, though frequently very little so.

Imagine, now, the patient up and about, or straining to evacuate the bowel or bladder. We must, of course, have the protrusion produced many times a day. Ask the patient whether there is tenderness at this point and whether she has discomfort there. The answer will frequently be "yes." She will tell you that her clothing often irritates her and that bathing the parts or any roughness produces the same results. It occasionally happens that close questioning will reveal the fact that practically all her symptoms are those just mentioned. At other times they are but a part, though an important part, of the urinary symptoms of which she complains. Frequent urination has many causes. The usual ones lie perhaps in the urinary passages above the meatus,

Fig. 3.—Lines of incision used when other operations are performed requiring the usual longitudinal incision in the anterior vaginal wall.

but I have occasionally seen it produced by this condition alone. It is well to question, when painful urination is complained of, as to its nature. The passage of urine over a swollen, irritated meatus produces burning and discomfort at this point.

In considering the correction of cystocele, with or without a prolapse of the uterus, I would urge that the condition of the urethra be observed, and if it is prolapsed, that this condition be corrected at the same time, or, if the latter condition alone exists, that the slight operation necessary to its correction be offered the patient. The operation will vary somewhat according to the circumstances. Let us assume first that the prolapse of the urethra exists alone. First we will remove the caruncle or protruding mucosa. This should be done with greatest delicacy, because the tissue is extremely soft and bleeds freely. A very fine stitch or two on a fine needle is occasionally, but not always, necessary. More important is the closure of the meatus to its normal dimensions, and this is done by making a small denudation (Fig. 1), removing a bit of the circumference of the meatus and denuding a little of the surface beneath it as in the diagram. The placing of the fine chromicized sutures will vary according to the individual case, but there is little difficulty in this part of the operation. There follows a large triangular denudation of the anterior vaginal wall that protrudes (Fig. 2), the base of which is placed as high as the under edge of the pubic bone, or slightly higher, so that when it is closed by sutures the meatus is drawn back to a normal position. The stitches, which must, of course, avoid the urethra, are inserted deep enough to obtain a good hold of the firm tissue close to the pubic bone. I commonly employ chromicized catgut.

If an ordinary cystocele operation is performed, the usual median incision along the anterior vaginal wall should continue well forward, and should then be broken by a transverse one, which forms the base of the triangle described above, the operation being completed in the same way (Fig. 3). When an interposition operation is performed, I would urge bringing the fundus close to the pubis and stitching it rather firmly there, the retaining stitch being placed directly on top of the fundus. This, I believe, will prevent a protrusion afterward of the anterior wall at this point and, if combined with a correction of a previously existing protrusion of the meatus and anterior wall, will do away with and prevent the occurrence of this disagreeable result; at least, I have had no trouble since I have been more particular about doing it this way.

I am aware that many gynecologists have recognized the condition that is the subject of this paper and have adopted similar means of correcting it. I am sure, however, that the practice has not been universally followed and has not been sufficiently emphasized.

ABSTRACT OF DISCUSSION

DR. S. M. D. CLARK, New Orleans: Murette's article shed new light on the true pathology of this incontinence of urine. The walls of the urethra are parallel normally. In childbirth the structures that support the posterior vaginal wall are damaged in such a way as to cause a prolapse, a sagging, and instead of having parallel urethral walls a bottle formation results. That is the basis of the whole trouble. By reestablishing the parallelism of the urethral walls, which Dr. Smith's procedure does in the large majority of cases, the incontinence is overcome. Murette's procedure, which we have adopted in our clinic, does that very effectually.

DR. F. F. LAWRENCE, Columbus, Ohio: Before a prolapse of the urethra can occur, as described by the essayist, there must be a descent of the uterus, together with the formation of the cystocele. A cystocele or urethral prolapse cannot develop so long as the uterus lies in its normal axis. The first thing that must occur is the dropping downward and forward of the cervix, thus relaxing and permitting pouching of the anterior vaginal wall with the development of cystocele. Any operation which shortens the anterior vaginal wall tends to draw the cervix forward, and must fail in its object because it favors the descent of the uterus. I very much doubt if any of us have ever seen a cystocele when the patient had a good perineum to support and hold the cervix in its proper position. Hence, the first and most important thing to do is to rebuild the perineum, and this must be done in a manner to get a wide infolding of the deep pelvic fascia and perineal muscles at its upper point, so as to hold the cervix back in its normal position. Then with the anterior colporrhaphy performed in such manner that the suture line is in the long axis of the vagina, we will get results. Any operation which produces a crosswise cicatrix will shorten the vagina, tending to pull the cervix forward and widen it, favoring the development of cystocele.

DR. ARTHUR H. CURTIS, Chicago: A great number of patients complain of symptoms and on routine examination we fail to recognize the pathology. It is necessary in such instances to examine the patient in the standing position. In the recumbent posture, even when the patient strains, we will often overlook a relaxed urethra and cystocele and even a prolapse of the uterus. When the patient is standing these lesions are almost invariably evident and easily diagnosed. As to urethral caruncle: the more common form is that in which there is a moderate prolapse of the urethra with the development of redundant granulations on this prolapsed tissue. About one year and a half ago I noted that there was usually a cystocele in conjunction with the caruncle. Since then I have failed to observe a single caruncle in which there was not a urethrocele or cystocele. I have since performed all caruncle operations with removal of the caruncle, combined with slight reparative operations on the prolapsed urethra and cystocele. In none of these instances have I seen a recurrence. Therefore, I believe it would be a good plan in cases where we find a caruncle to look carefully for the causative urethrocele or cystocele.

DR. RICHARD R. SMITH, Grand Rapids, Mich.: I did not mention incontinence as one of the symptoms for which this operation should be done, nor did I mention cystocele, with which this prolapse of the urethra is so often associated. That is a subject quite in itself. This operation is not intended to correct the cystocele. The standing of the patient during examination is a very important point. Snipping off the caruncle almost invariably leads to recurrence. It is necessary to protect the mucous membrane at the lower end of the urethra.

What Is Diabetes?—All our present knowledge and particularly the recent experimental work of Allen show that the underlying deficiency is a failure of the internal secretion of the pancreas, with consequent inability to convert sugar from the crystalline to the colloid form, in which form it must be present before it can be utilized by the body cell. Such failure on the part of the internal secretion of the pancreas may or may not be related to gross disease; it seems reasonably certain that nervous disturbance may disturb the equilibrium normally maintained between the organs of the endocrine system, and undoubtedly nervous disorder frequently upsets the balance of a diabetic. There is reason to believe that the white races generally are overtaxing the pancreatic function; the present day enormous consumption of carbohydrate, and particularly of sugar, is a new thing for the race. In America the consumption of sugar per head has risen from 4,990 grams per head in 1810 to 40,700 grams per head in 1916; perhaps a sugar famine would not be an unmixed evil.—J. F. Wilkinson, *Med J. Australia,* Feb. 14, 1920.

TYPHOID REDUCTION IN SOUTH CAROLINA

COMPARATIVE RESULTS IN COUNTIES WITH AND WITHOUT HEALTH ORGANIZATIONS *

L. A. RISER, M.D.

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COLUMBIA, S. C.

The vital statistics department was organized in South Carolina in 1915, and we have no accurate records of deaths from typhoid previous to that year. In this paper I will attempt to show how typhoid fever has decreased, and what methods are being used to effect this decrease. The decrease has been gradual

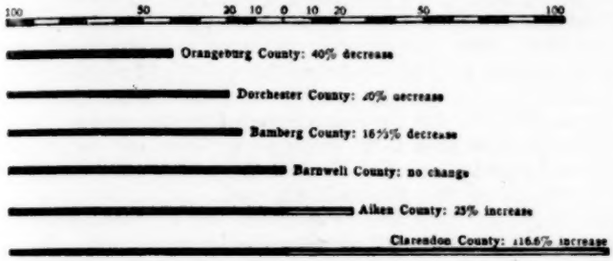
100 50 20 10 0 10 20 50 100
Orangeburg County: 40% decrease
Dorchester County: 40% decrease
Bamberg County: 16⅔% decrease
Barnwell County: no change
Aiken County: 25% increase
Clarendon County: 116.6% increase

Fig. 1.—Increase and decrease in incidence of typhoid, 1917-1919: Orangeburg has had a county health department for three years. It has an area of 960 square miles and has made the same appropriations each year as Darlington with 600 square miles. Other counties compared have had no city or county health organizations.

since 1915, with the exception of 1918, during which year the army camps brought more than a hundred thousand people to the state. This does not refer to soldiers, but to workmen and camp followers who were not under army restrictions, and we credit to this fact the increase in 1918, as the cities in which these camps were constructed showed very large increases, some of them doubling their number of deaths of the preceding year.

ORGANIZATION

In 1917 the first county health unit was formed in South Carolina. This organization was perfected in Orangeburg County, one of the largest and most prosperous counties in the state. The unit consisted of a physician as director, with a corps of inspectors and carpenters. Greenwood County also took up the work during the year.

TYPE OF WORK

The ultimate object of the health unit was to stamp out typhoid fever and other intestinal diseases. The type of work was both educational and constructive. The physician gave lantern slide lectures in each school district on various health subjects, but stressed intestinal diseases spread by bad sanitation. The inspectors made a survey of the district, visiting each home and securing data as to living conditions of the family and sanitary surroundings of the home. Wherever possible the inspector persuaded the householder to put in a sanitary privy; if the inspector failed, then the physician made a personal visit to the home. The carpenters assisted in the construction of the privies. Specimens of feces were collected and examined for intestinal parasites, and when the patients were found infected they were given free treatment. By circulars, posters, personal letters, exhibits, school contests, public lectures, newspaper publicity and personal interviews the importance of sanitation was constantly kept before the public

GROWTH AND PROGRESS OF COUNTY ORGANIZATIONS

In 1918 four full-time county health organizations were perfected, in 1919 six and in 1920 seven. In 1918 medical inspection of rural schools was made a part of the work, and public health nurses were added to the county units. Darlington County is probably the only county in the South in which every rural schoolchild, white or colored, has received a medical examination and a follow-up visit from a nurse.

Each organization is now designated as a county health department, and the physician has by legislation been made the county health officer, and his duties are prescribed. Counties which in 1917 appropriated $2,000 for this work are now appropriating $5,000, and in addition cars are furnished the nurses by local organizations. Our state appropriation for 1917 was $7,000 for county health work; for 1920 we have been given $27,000, a portion of which will be used for a traveling moving picture unit.

DIFFICULTIES ENCOUNTERED

In 1917 comparatively few sanitary privies were built—pioneer work is always difficult. The war with all its effects, the shortage of labor and material, the physical unrest, the breaking up of departments by the volunteering of men (every county director but one, as well as the state director, having volunteered and entered service) crippled the work for a time. The present high prices and low salaries are keeping up the difficulties, but with it all we have something to show for our work.

RESULTS OF WORK

Each county in which we have worked two years has shown a decided decrease in typhoid; the first year an increase is usually shown, owing, perhaps, to better reporting. We have selected this disease as a type of intestinal disease and have selected Darlington and

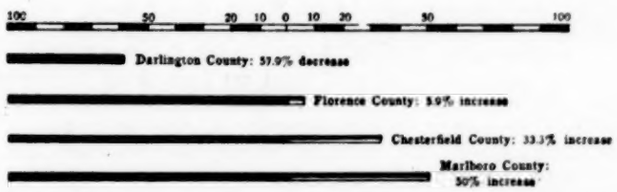
100 50 20 10 0 10 20 50 100
Darlington County: 57.9% decrease
Florence County: 5.9% increase
Chesterfield County: 33.3% increase
Marlboro County: 50% increase

Fig. 2.—Increase and decrease in incidence of typhoid, 1917-1919: Darlington has had a county health department two years. Florence has had a city but no county health department. Chesterfield and Marlboro have had neither city nor county health departments.

Orangeburg counties for comparative results with surrounding counties having no health organizations, as these counties have had no campaigns of giving free typhoid inoculations. We are giving results from each county touching Darlington where no work has been done, and each touching Orangeburg where no work has been done, with the exception of two black counties. These two counties with a large black population give poor reports, as so many of the negroes are unattended by physicians and "fever" is given as a cause of death. Mr. C. W. Miller, our vital statistician, who helped me to get up these statistics, thought the statistics of these two counties unreliable.

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

It will be noticed (Chart 2) that each county touching and compared with Darlington shows an increase, while Darlington shows a decrease in typhoid—Darlington shows a decrease of 57.9 per cent. from 1917 to 1919.

Orangeburg shows a decrease of 40 per cent. (Chart 1). This is one of the largest and most populous counties in South Carolina, and it would naturally take longer for results to show. The state at large has gradually decreased its typhoid death rate, as illustrated in Chart 3, from 35.2 per hundred thousand in 1915 to 21.7 per hundred thousand in 1919.

CONCLUSIONS

The reduction of typhoid fever is largely a matter of education. The building of privies alone will not check typhoid entirely, but will reduce it. We have purposely held no campaigns of free inoculations of antityphoid serum in Darlington and Orangeburg counties, and the results shown are due to educational work and privy building alone, and not to inoculations. If this disease can be so materially reduced by education, it would seem that all other diseases of which the cause is known could be reduced in a similar way.

A county health organization is necessary, as one physician or nurse without assistance is not adequate for the supervision of the health conditions of a whole county.

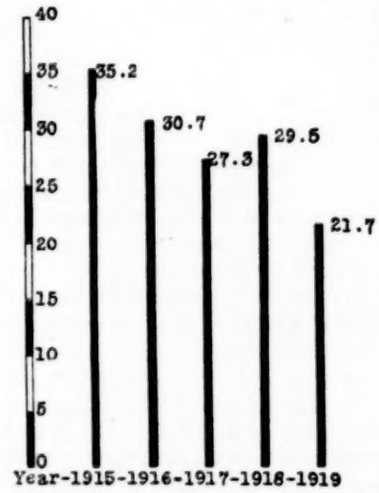

Fig. 3.—Death rate per hundred thousand.

ABSTRACT OF DISCUSSION

DR. W. S. LEATHERS, Jackson, Miss.: In Mississippi we have organizations at work in different counties, and the results we have obtained are along the same lines which have been indicated by Dr. Riser. In one county in the state we had about 230 typhoid cases a year. This county was leading the state in typhoid. In that county we organized one of these units and conducted what we termed an intensive health campaign. We built about 2,000 privies, visited every home in the county, obtained the name of every man, woman and child we could find and tried in every possible way to get in touch with the people, and to determine the conditions which existed in the county. We instituted measures which we thought were necessary for the prevention of intestinal diseases. This intensive campaign was conducted in 1917. In 1918 there were fifty cases of typhoid and eight deaths. That is an example of what may be accomplished in every county in every state in the South; in fact, that may be done wherever typhoid exists. In 1914 there were approximately 6,066 cases of typhoid in the state. In 1919 there were 3,660 cases of typhoid. We have been able to get 90 per cent. of the doctors of the state to report their morbidity statistics for a period of six years. We assume that there are errors in these reports, but the errors are uniform, in all probability, for the same doctors have been making the reports. The decrease in figures is unmistakably very significant, and we can draw from these figures a very definite conclusion so far as reduction of typhoid fever is concerned. The education of the people is basic. One of the most effective measures is personal demonstration. We ought to go into the various communities and work with the people, and show them by practical demonstration what to do. We can demonstrate in a community how to build a privy and get people to build privies by demonstration methods, and illustrate that by such methods we will get very definite results in the reduction of typhoid fever. The time is rapidly approaching when typhoid fever will be a relatively rare disease.

DR. JOHN D. MCLEAN, Philadelphia: It has been stated that the incidence of typhoid fever indicates the health of a state or of a community. If that be so, the report we received in Pennsylvania last week, would indicate that Pennsylvania is becoming a very healthy state indeed. We have found that the greatest number of epidemics have been caused by carrying the disease from one person to other persons through the water and through the milk. If that be true, then the lessening of typhoid fever must be effected through supplying pure drinking water and pure milk. Pennsylvania, therefore, has determined, as far as it possibly can be done, to control the water supply of the state. We have also determined that the people shall drink good milk, clean milk. To bring this about we have, with other measures, drawn two model health ordinances. One provides how an organized community can get pure water to drink, and the other provides how this community can get pure milk to drink. We ask those responsible for the laws and for the expenditure of the finances in these communities to pass these ordinances. We hope to secure pure water and pure milk. Educate the public to the need for these things so that they will tell those responsible for the expenditure of their money that they must install a filter plant or they must install a pasteurizing plant for milk.

How is that done? Choose from among the existing agencies one, the Red Cross, the Emergency Aid, the Y. M. C. A., the Y. W. C. A., whatever it may be in that particular community, and create an advisory board to tell the councillors that they represent public opinion, and ask them to spend the money. In Pennsylvania we investigate every case of typhoid and take measures to prevent a spread of the disease and in that way we have lessened the number of cases.

DR. G. C. CHANDLER, Shreveport, La.: The sources of these diseases are the excretions of human beings, and in getting rid of these excretions and the germs they contain you will have a healthy city and save many lives. One of the best means of suppressing typhoid fever is to take milk samples, and wherever you find water in the milk, fine the milkman the limit. By doing that you will stop the spread of typhoid fever from milk. Typhoid fever can be stamped out easily if you know the source of the disease. Shreveport, up to 1918, used filtered bayou water for its water supply. In 1911, when they had about the lowest number of deaths from typhoid fever, there were 104 deaths among the residents of Shreveport from fevers, diarrhea and dysentery. There were only about 25,000 people there then, and that was about the lowest death rate we had.

DR. JOHN A. FERRELL, New York City: The public health work in South Carolina is a demonstration which carries conviction to the people and to their legislative representatives. There is uniformity of opinion that to succeed in public health work we must first educate the public. There is some difference of opinion as to the best method for conducting the educational program. The opinion is held by some enthusiasts that if you lecture to the people and distribute literature among them they will readily accept what you have to say, do what you tell them to do, and vote the money required for the work. To these enthusiasts the control of disease is a very simple undertaking. Once you have the knowledge as to the cause of the disease and its mode of spread, all you have to do is to tell the people about it, these optimists believe, and the job is done. Health officers of extended experience have learned that the people can be interested in control measures, that they are open minded, but that they have had unsound advice on many occasions. They are ready to be shown in terms that are simple and understandable, and when convinced that the proposed program has merit from a business standpoint and will yield a satisfactory return on the investment you may depend on them to give support to their leaders in public health. This method of developing public health work has been followed in a number of states, particu-

larly in the South. South Carolina, for example, in the year 1908 had less than $10,000 state appropriation for health work. The appropriation voted by the legislature which recently adjourned approximates $155,000 a year, exclusive of the appropriation for tuberculosis work. The growth in a number of other southern states has likewise been phenomenal. Dr. Riser recently reported that the South Carolina legislature actually appropriated more money for the health program than was requested by the executive officers of the state board of health. That the people in these states have been convinced that public health work is worth while is evidenced by the growth in the state appropriations for eleven southern states from about a quarter of a million dollars in 1910 to more than two million dollars at present. Ten years ago a full time health officer in these states was the exception. Now, they are numerous and, in the near future, I believe, will be the rule. The state's funds are being generously supplemented by towns and counties for the purpose of establishing local departments of health work in cooperation with the state board of health. These developments should be a source of keen gratification to the public health officers who have had the wisdom and ability to give the people a large value for their investments in public health.

DR. LUTHER A. RISER, Columbia, S. C.: The figures I gave here are not figures of typhoid fever cases, but of typhoid fever deaths. Dr. Leathers spoke of the necessity for demonstrations. I consider demonstrations as part of this educational work; it is all educational, but the demonstration is just a type of the educational work. Dr. Chandler spoke of the reduction of typhoid fever as being an indication of the reduction of other diseases of that type. It is also an indication of the reduction of all types of diseases, because in these counties you will find a reduction of tuberculosis just as well as you will of typhoid fever and intestinal diseases, and the death rate has also decreased in those counties more than it has in those counties where no educational work of this type has been done.

THE TRAINING OF INDUSTRIAL PHYSICIANS *

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CINCINNATI

It took the medical profession quite a while to realize that the possession of a sound medical education did not, per se, qualify a man adequately to carry on the duties of a health officer. The profession has likewise been somewhat slow to recognize that the acquisition of sound surgical technic or skilled diagnostic ability does not qualify a man to carry on the duties of an industrial physician. Just as public health work led to the requirement of specialized training, so with the development of industrial medicine has come the realization that herein lies a specialty in medical science that requires of the physician special theoretical and practical training, which has in the past ordinarily been outside the sphere of medical education. Moreover, it is just becoming apparent that the profession has in a measure failed to grasp an opportunity for the extension of its influence and the utilization of medical knowledge and experience toward the prevention of disability and the shortening of the disability period, the profession's duty to society.

The need for special training of physicians engaged in industrial work has been recognized by the profession none too soon nor too widely. Modern industrial management has been quick to distinguish between the physician trained in industrial medicine and the physician catering to industrial practice.

Urban health officers have long seen in the work of the industrial physician valuable and much needed assistance in constructive health work, for such can be prosecuted intensively among industrial personnel as it can in no other group.

Civic bodies, social workers, large industrial corporations and community organizations have seen that the old-time plant physician did not render to industrial personnel the maximum service that could justly be expected of medical science.

With the realization by these several groups of society of the need for specialized training of medical men, several of our colleges have offered such training facilities.

PRESENT FACILITIES FOR TRAINING [1]

There are thirty-one medical colleges or universities offering training facilities or instruction in industrial medicine or related subjects. Of these there are two schools offering courses in this subject, leading to certification on satisfactory completion; ten schools offer a limited amount of work in the curriculums leading to the degree of Doctor of Medicine; four universities offer some instruction in vocational hygiene during the course leading to one of four degrees in public health, the requirements of which are not standardized, while fifteen schools offering postgraduate public health instruction include limited instruction in industrial medicine or related subjects.

Thus we see that there are, first, inadequate opportunities in the United States for the physician to receive either theoretical or well directed, practical instruction in industrial medicine, and secondly, that such courses of instruction as are offered show a marked lack of uniformity in conduct and standardization both of requirements for entrance and completion (certification).

It is hoped that the profession will interest itself sufficiently in this exceedingly important function of medicine to stimulate a more general inauguration of industrial medical training facilities in our medical schools, with a standardization of requirements for completion and some uniformity in type of courses of instruction.

In anticipating such action on the part of our schools, it is essential that a clear and complete understanding as to the basic requirements of an industrial physician be fully discussed, toward the end that the necessary facilities for the training of such specialists be provided. It is a discussion of this subject that I have been asked to open.

On attaining the degree of Doctor of Medicine, the future industrial physician should look forward to assuredly one year, and preferably two years of postgraduate general medical experience before he assumes the study of industrial medicine. One year of this time, at least, should be spent in internship. The experience to be gained in outpatient clinics, in dispensary work, on emergency service and admitting wards in general hospitals will be found of value. Such postgraduate experience should be supplemented, if possible, by work in night clinics, industrial clinics, industrial health centers, public health agencies and

* Read before the Section on Preventive Medicine and Public Health at the Seventy-First Annual Session of the American Medical Association, New Orleans, April, 1920.

1. I am indebted to Mr. Royal Meeker of the Bureau of Labor Statistics for the information and data here given.

municipal dispensaries. It is in such places that he will study, if he is thoughtful, not only the sick individual, but the sick as a group. Such experience, supplemented by some general private practice, is invaluable. If not socially minded, he will acquire a social point of view, and he will see at first hand the medical, social and economic problems confronting society and awaiting the assistance that the medical profession has in its power to grant.

SPECIALIZED TRAINING

The completion of this instruction and experience, if taken advantage of, should afford a good groundwork for entering industrial medical training. This is postgraduate work. It should be given in an A-1 college, either in a special department or in a division of the department of preventive medicine.

HYGIENIC TRAINING

Hygienic instruction will fall naturally into two classes, medical and engineering.

The first should cover the subject of vocational hygiene in its entirety. The student should be taught to recognize occupational affections, not only direct, specific occupational diseases, but the indirect effect of occupation on the physiology of man, though masked by subsequent acute intercurrent pathologic conditions. Among these none is more important than that of industrial fatigue. In this subject the basic physiologic facts should be acquired, but he should not allow himself to become too academic, realizing that industry is essentially practical. The student of industrial medical science should here acquire a knowledge of personal hygiene in all its aspects and learn to impart this knowledge to industrial workers in a manner which is characterized essentially by clarity and brevity, so that large groups badly in need of benefits to be derived from this information can thus profit.

Foremost in personal hygiene is dental prophylaxis. Though this specialty in industrial medicine will be handled by the dental profession, yet it should not be introduced in industry without a medical department, and should be a part of such organization. The industrial physician should possess sufficient information on the subject to apply profitably the specialized knowledge of the oral hygienist or dentist.

The student at this time should acquire an extensive knowledge of medical supervisory systems. The experience and knowledge of those engaged in this type of work both in military organizations, public schools, insurance companies, industries and other organizations should be carefully acquired. He will at this time learn what is meant by, the purpose of, and the limitations of the physical examination in industry. The distinction between physical examination and medical inspection should be clear, with the scope and function of each definitely outlined. He should understand the inauguration and conduct of follow-up systems, and should profit by the knowledge and experience of those engaged in the organization and conduct of visiting nurse systems.

The industrial medical student can also profitably learn of those who have specialized in the subject of recreation and athletics for groups, and be prepared to institute such activities among industrial workers where indicated, in a manner which is consistent with the type of industry, the character of the work performed, and with other circumstances.

Engineering hygienic instruction is ordinarily outside the scope of training of the medical man. Many of these subjects are very broad and have given rise to specialists among engineers. The industrial physician, however, should have a sound knowledge of the subject, for on him will fall the duty of acquiring the desired conditions, even if he himself is not capable of carrying them out in detail. I refer to such as heating and ventilating systems and the problems of illumination, particularly artificial illumination. Elementary engineering principles of exhaust and supply systems should be well understood, and a thorough knowledge of the mechanical principles involved in the design, construction and operation of drinking water systems should be obtained. A study of the engineering phases of housing is of great value. He should acquire knowledge of the various sanitary equipment, such as toilet and wash-up facilities; baths, lockers; water supply and sewage disposal systems; and industrial waste disposal methods, also the specifications, outlay and conduct of restaurant or cafeteria systems; and he should be able to discuss with specialists in these various fields the basic problems presenting themselves, and so act as the adviser to the industrial management on these problems.

INDUSTRIAL CONSIDERATIONS

It should be immediately recognized by the profession that a physician cannot be successful if he has in his possession only a purely academic knowledge of the various phases of industrial medical work. The position of the physician in industry is unusual in the experience of the profession. He must first learn that his success in this field and the respect that he commands will result, not ex officio by reason of the fact that he possesses the title of doctor, but by the quality and type of his work. Unless he can apply his academic knowledge in a practical manner in full coordination with other branches of the industrial management, he will not receive the consideration, either executive or otherwise, that he should. He must learn that his leadership depends on his ability sufficiently to convince his associates of the soundness of his views and activities. This type of leadership is at the other extreme, however, of that which attempts leadership through the dignity of the title doctor. He must learn that many activities which are theoretically sound are not practical. He must learn, in other words, that there is a compromise between practical industrial medicine and theoretical hygiene, and unless he can with this realization apply theoretical medicine only so far as it is practical, or so far as he can make it of practical value, he will be unsuccessful. He must learn, too, that the respect that he commands from the industrial workers will depend solely on the quality of his work and on his personality.

I know of no other place than in an industrial plant where the medical graduate, essentially an individualistic practitioner, can acquire all this experience and knowledge. It is my opinion, therefore, that the industrial medical training should be partly theoretical and partly practical—that the theory be given in the classroom and that the practical be given in industrial plants. At least one half of the period of training should be spent actually in the plant, associated with the various departments with which the industrial medical work is so closely associated. He should understand the basic principles of employment man-

agement and personnel relations. He should become familiar with training and apprenticeship systems, with the view of there applying preventive medical work. He should know of the organization and conduct of continuation or skilled schools, and if he is thoughtful he will immediately see an opportunity for the practical application of medical supervisory work. He should understand trade tests and their relation to mental tests and psychology. He should understand job analyses, time study and shift systems, and their relation to his academic knowledge of fatigue. He should learn of accident prevention and safety-first organization and activities and consider their intimate relation to first aid medical work; physical examination, mentality, acuity of vision and such hygienic subjects as illumination, of which he has academic knowledge. He should acquire the necessary knowledge to analyze and thoroughly understand and deduct information from various labor force statistics, such as absenteeism, turnover, rates of pay as related to cost of living, housing, food—and hence health.

SOCIAL AND ECONOMIC ASPECTS

The student should understand the various systems of education of large groups and the basic problems presenting themselves in Americanization activities. He should know state insurance, group insurance, liability insurance and such actuary problems as present themselves in the mutual benefit associations and the pension plans. He should become acquainted with, understand, and enter into the local social and economic problems as such affect the industrial workers with whom he is concerned.

He should, in brief, have a sound medical education; ample practical experience in medical relief; a well rounded knowledge of preventive medicine; a thorough knowledge of vocational hygiene; an understanding of our present day social problems, and be able in the light of this knowledge to apply intensively to groups and in a practical manner the best that the medical profession has to offer to society.

ABSTRACT OF DISCUSSION

DR. J. W. SCHERESCHEWSKY, Washington, D. C.: The industrial physician has it in his power to influence enormously the health of a considerable portion of the community in which he is located. Many industrial communities have defective sanitary conditions which make the question of public health a problem of great difficulty. But industries are beginning to recognize more and more the dividends from keeping their men 100 per cent. well all the time. Not only is that good business, not only is it of value locally, but it is reflected in national prosperity and national productivity. The prosperity of the country, of the state or of the city rests on the productivity and activity of its man power, and the ability of its man power to produce rests on health. We must recognize this new group of industrial physicians who are endeavoring to carry on this type of work as powerful agents in the development of public health. I am sorry that the establishment of departments of industrial hygiene has been neglected in our municipalities. I know of only one city, among the first class cities, that has created such a department. The general tendency has been to leave industries pretty much to themselves, and any definite scheme of correlating the work of preservation of health in industrial plants and that of the city health department is very slow in being developed. The industrial physician forms the link by which the city health departments may be coupled with the industries. If they can be linked up they will be able together to make great progress in a general health movement. The industrial physician will form the means by which industrial corporations themselves may be made to take an active interest in the sanitation of their own communities. The general attitude on the part of industrial units is pretty much as follows: We never mix in local politics because we want to be free from the suspicion of being connected with politics in order to advance our own purposes. As a matter of fact, that is a very short-sighted policy for industrial corporations to take, because most of them are large taxpayers, and they are more intimately concerned than anybody else in the health of the community. Therefore, the training of industrial physicians is one of great importance. Our great universities are giving their students an opportunity of entering a profession which gives a man a high degree of professional qualification, and places him in the situation of being able to influence for good the lives and health of a large number of our fellow citizens.

DR. EDWARD MARTIN, Philadelphia: The keynote of these most valuable papers and discussions today has been cooperation. We feel in Pennsylvania that the public health service means well, but its pull is not always with us, and sometimes it gives us little surprises. Public health service people are scattered around our state doing even they do not know what. No harm is done, as a rule, but we would like to work with the public health service, and we find it difficult sometimes to do so. The Red Cross is giving us splendid help and cooperation. Without it we could do little.

PARAPLEGIC MULTIPLE SCLEROSIS

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When multiple insular sclerosis manifests itself by the classical signs of nystagmus, intention tremor and scanning speech, the diagnosis is self asserting. Such cases are extremely rare, and this triad of symptoms frequently is never fully developed or appears only after the lapse of years. Many cases persist clinically as optic atrophy, spastic paraplegia, primary lateral sclerosis, or vague organic and functional nervous maladies for long periods of time before the actual pathologic diagnosis and clinical differentiation are made. The frequent association of this condition with neurasthenia and as frequently with hysteria has long been recognized, but the organic process is too often overlooked under the protean subjective mask of the psychoneuroses.

A generation back, multiple sclerosis was considered an absolute rarity in this country, largely because only the classical picture was recognized. In some of its larvate and unusual forms it now furnishes a common clinical finding. On the point of possible increasing frequency of this disease I recently sent out a questionnaire to a limited number of American neurologists. All agree that they are seeing more cases than formerly, but all agree that they now recognize the formes frustes and aberrant types with a readiness that is somewhat of a recent acquisition. This is my own feeling in the matter, but I am convinced that the rank and file of the profession are not alive to the easy recognition of this dreadful disease. In the last three years in my private practice I find notes of thirty-two cases, in addition to which I might add an indefinite number seen in hospital practice. This group may perhaps be compared with the statistics of Uhthoff, who was able to collect 100 instances in all the hospitals and clinics of Berlin in six years. But that was a decade ago, and only the advanced cases apparently were listed. Some recent observations tending to establish the etiology of the disease on a nonsyphilitic spiro-

chetal basis make one hesitate to deny the possibility or even the probability of an increasing incidence.

Considering that the lesions of multiple sclerosis are extremely widespread in the brain and spinal cord, without symmetry or systematization, it is quite surprising that the original clinical conception should have prevailed so completely and persisted so long. In many cases, symptomatically at least, the brain seems quite exempt; in others the cord is not materially disturbed; but in all, sooner or later both are implicated.

A number of clinical types may be encountered: first, the generalized classical form, which is infrequent, except as a terminal phase of the fractional forms; second, the cerebellar type, a rare early manifestation of the disease which tends to become full fledged rather rapidly; third, the optic atrophy type, which I believe is not uncommon and which only slowly eventuates into the generalized condition; fourth, the paraplegic or lateral sclerotic type, which appears to be the most common of all and which very slowly takes on the features of upper level and cerebral involvement, and fifth, a very rare monoplegic type.

I have no intention of drawing hard and fast lines, for they are far from justified in a disease the lesions of which are as diffuse and as uncertain as a shotgun pattern. However beginning, all types tend to eventuate in the fuller picture of the old description, and case records show the remarkable variations presented by cases at various times. To this observation must be added the tendency of the disease to advance in waves or crops and to recede often to a marked, but never, I believe, to an absolute degree. These clinical fluctuations are pregnant sources of false hope, and are particularly trying to the judicial mind attempting an evaluation of therapeutic effort.

While I desire to call immediate attention to the paraplegic and spastic form, it must be said that some degree of spasticity is the rule in all cases. This clinical type commonly begins with a weakness or clumsiness in one leg or foot. Patients not rarely describe a flapping of the foot in walking, or their friends call their attention to an irregularity in gait. This may improve or seem quite to recede after being present for weeks or months. Not infrequently it leads to stumbling or rather severe falls, and I have had patients who gained a reputation for falling in an unexpected and, to them, unusual fashion, for several years before other disability led to definite investigation.

Contrary to early descriptions, sensory disturbances both subjective and objective in character are not at all infrequent in this type of multiple sclerosis. Complaints of heaviness, numbness, coldness, and very rarely of more painful paresthesias have been encountered. I have actually demonstrated objectively a certain degree of coldness in one leg as compared with the other in two patients who complained of it, and suppose it must have depended on local circulatory disturbance, though no vascular inequalities could be demonstrated by manometer or detected by palpation.

Hypesthesia and girdling sensations of segment level distribution of very definite and persistent character have more than once given rise, in conjunction with other paraplegic features, to a diagnosis of pressure on the cord. Elsberg operated on one such patient, expecting to find a cord tumor, and I have had the same experience. Needless to say, the upper level symptoms were absent at the time, but in my case gradually developed to a complete and illuminating degree.

Among the signs of the disease, when affecting mainly or only the lower extremities, are the pathologic reflexes—ankle clonus, Babinski's toe sign, intensified knee jerks, and last and most important of all, one-sided, partial or complete abolition of the umbilical reflex. The complete superficial abdominal reflex has been present in only one of my cases, and it may later disappear. With the absence of superficial abdominal reflexes, the deeper muscular reactions brought out by the percussion hammer are retained and often apparently increased, in parallel with other muscle and tendon responses.

An interesting and instructive observation is furnished by the lack of uniformity with which the reflexes are modified on the two sides. I have seen the abdominal reflex abolished on one side only, and in one case obtained from one lower quadrant of the abdominal area alone. I have seen ankle clonus on both sides disappear first on one side and, after a year, gradually on the other; but a Babinski once established seems to be persistent. Some patients give no toe movements of any kind from plantar stimulation, a feature emphasized years ago by Buzzard, who thought he saw in it a warning against a too ready diagnosis of hysteria.

The sphincter control in the late stages is not rarely weakened, and actual incontinence may occur. The gait shows all modifications of spastic, paraparetic and incoordinate conditions. Ready fatigue after a short walk, quickly yielding to a few minutes' rest, reminds one of intermittent claudication, but of course lacks the arterial factor.

To the lower level symptoms of the paraplegic type there are commonly added some of the cephalic manifestations of cerebral participation. Squints, double vision, marginal optic atrophy, irregularities of the visual field, cerebellar symptoms, intention tremor, speech defects, and even mental peculiarities, are some or all, in slight or marked degree, sooner or later observed.

The condition, therefore, as in all other manifestations of multiple sclerosis, becomes progressively worse, and complete disability the ultima. Fortunately, the patients suffer little, aside from the growing feebleness and helplessness, to which they progressively adjust themselves, and the disease does not in itself appear to be fatal.

The treatment of multiple sclerosis is a frequent source of disappointment. The iodids, mercury and arsenic have at times had strong supporters. Nonne and other European clinicians have given importance to Merck's fibrolysin, which I have tried very faithfully without in the end being able to share their favorable point of view. I am hopeful that a new era of therapeutic success may be shortly attained if the spirochetal origin of the disease is firmly determined and effective spirocheticidal remedies are discovered.

The contention of spirochetal origin started three years ago with Kuhn and Steiner[1] who, after injecting guinea-pigs and rabbits with the blood and serum of patients suffering from multiple sclerosis, found the spirochetes in some of the rabbits. These animals had presented motor symptoms suggestive of the human clinical manifestations. The spirochetes did not resemble those of syphilis, but rather the organism

1. Kuhn and Steiner: Med. Klin. **13**: 1007, 1917.

found in hemorrhagic icterus. They were spiral, often with a refracting terminal point, variable in form, and either extremity sometimes provided with a hairlike process. In 1918, Siemerling [2] found several similar spirochetes in the brain of a multiple sclerosis patient two hours after death. The next year Marinesco [3] was able by intracerebral inoculations of spinal fluid from a patient to induce significant symptoms in guinea-pigs, and recovered spirochetes of the Kuhn-Steiner type from fluid taken from the fourth ventricle.

I have had several spinal fluids carefully searched for spirochetes without success, but have not yet repeated the animal experiments.

When we recall the difficulty of eradicating the syphilitic organism when seated in the parenchymatous nervous structures, a chill is given to enthusiastic expectations in regard to the manageability of this form of spirochete, even if it should be proved the essential cause of multiple sclerosis.

I have treated several cases with intensive courses of mercury, arsphenamin, neo-arsphenamin and the various iodids without being able to report any modification of the clinical course of the disease. As in syphilis, we must perhaps hope for better therapeutic agents.

1117 Marshall Field Annex.

THE TOXICITY OF NITROBENZENE

WITH REPORT OF A FATAL CASE

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Recently in THE JOURNAL there appeared three articles on the subject of acute nitrobenzene poisoning. The first, by Stifel,[1] referred to sixteen cases of nitrobenzene poisoning among army officers at Jacksonville, Fla., caused by a shoe dye. All men had recently worn freshly dyed shoes or puttees. The chief symptoms were marked cyanosis, headache, vertigo and tinnitus. Complete recovery occurred within from twelve to twenty-four hours in all cases. The second paper, by Scott and Hanzlik,[2] records some cases of nitrobenzene poisoning, with much the same symptoms as in the first article, due to the imbibition of "denatured" alcohol; here, too, no fatalities occurred. As a result of their observations and those of Stifel, these authors express the opinion that "this 'denaturizing' agent is relatively harmless." More recently, Sanders [3] reported a case of nitrobenzene poisoning with cyanosis, a rapid recovery being made.

That nitrobenzene may be quite toxic for man has been attested by many German writers, and by Cushny,[4] who states that it may cause "a grayish-blue cyanotic color of the skin and visible mucous membranes, often with nausea, vomiting, great muscular weakness, marked dyspnea, delirium and some convulsive movements of the face and jaws, less frequently of the whole body. Total unconsciousness and coma are followed by arrest of the respiration." According to Cushny, the symptoms are due mainly to blood changes (deformation and destruction of red cells; formation of methemoglobin and nitrobenzene hemoglobin) and to a central nervous action—stimulation followed by depression.

Fatal cases are not unknown, among which may be mentioned that reported by Blythe (quoted by Stifel) of a man who died following the accidental spilling of nitrobenzene on his clothing.

As may be surmised, most cases of acute poisoning from this substance, as recorded in the literature, were due to its absorption through the skin or pulmonary alveoli (inhalation), as in Blythe's case of fatal poisoning. In Scott and Hanzlik's cases it took place presumably from the gastro-intestinal tract, which, it may be argued, had some mitigating influence on its fatal toxic properties.

REPORT OF CASE

The case reported herewith resulted fatally, and was apparently uncomplicated nitrobenzene poisoning in which the poison was swallowed.

In 1917, a middle-aged white man was brought by patrol into the receiving ward of the University Hospital, Philadelphia, in coma. A striking feature was the marked ashen-gray cyanosis, which was more intense than that usually seen. There was a very strong odor of nitrobenzene (shoe polish) about the patient, especially in his mouth. Respirations were about ten a minute. Gastric lavage yielded a fluid of similar odor in which nitrobenzene was detected by chemical means. In spite of vigorous stimulation and the use of the pulmotor with attached oxygen tank, the patient died about forty-five minutes after entering the hospital. He did not regain consciousness. Death was apparently respiratory—the breathing becoming less and less frequent. No spectroscopic examination of the blood for methamoglobin or nitrobenzenehemoglobin was made. It was never learned in what medium the poison was taken.

COMMENT

The details of this case are necessarily meager because of its emergency character—the patient not having been "admitted" and therefore no history written. The facts are simply culled from memory. It is possible that some other poison was taken simultaneously. I simply wish to report it as a possible case of uncomplicated nitrobenzene poisoning with fatality, in which the substance was apparently swallowed.

CONCLUSION

Nitrobenzene may be more toxic than is indicated by Scott and Hanzlik.

University Infirmary.

2. Siemerling: Berl. klin. Wchnschr., 1919, p. 273.
3. Marinesco, G.: Rev. neurol. **34**: 481 (June) 1919.

1. Stifel, R. E.: Methemoglobinemia Due to Poisoning by Shoe-Dye, J. A. M. A. **72**: 395 (Feb. 8) 1919.
2. Scott, R. W., and Hanzlik, J. P.: Poisoning by Alcohol "Denatured" with Nitrobenzene, J. A. M. A. **74**: 1000 (April 10) 1920.
3. Sanders, F. G.: Nitrobenzene Poisoning with Cyanosis, J. A. M. A. **74**: 1518 (May 29) 1920
4. Cushny, A. R.: A Text-Book of Pharmacology and Therapeutics, Edition 5, Philadelphia, Lea & Febiger, 1910.

The Study of Surgical Diseases.—There can be little question that the diseases spoken of as surgical (because operative technic is employed in treating them) are of such great importance and the technic of their therapy has become so specialized, that one or more clinics of the department should be devoted to the study of these diseases. This does not mean, however, that the methods employed in studying these diseases differ from those used in studying any other group of diseases. Exophthalmic goiter is the same disease whether we treat it by removal of the thyroid or by rest and drugs. Whether we call the professor who studies especially those diseases in which the chief therapeutic procedures are operative, a professor of surgery or a professor of medicine, is unimportant so far as the principle is concerned. His methods should be those of the professor of medicine, and the surgical clinic should be exactly like the medical clinic with the addition of facilities for employing complicated operative procedures.—Rufus Cole, *Science*, April 2, 1920.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 12, 1920

CARDINAL FACTORS IN PULMONARY EDEMA

The menace of the poisonous war gases is no longer with us. Perhaps the suffering and deaths which these frightful agencies of destruction caused will not have been entirely in vain if the experience gained in the extensive study of war gas poisoning can be utilized with advantage in the relief of disease among mankind. The consensus among the investigators who concerned themselves with the pathology of the acute effects of the commonest war gases is that the prominent feature is a typical pulmonary edema. This is also a distressing symptom encountered in every-day clinical experience; hence whatever new may be learned about it has more than merely war-time application.

In a lecture before the Harvey Society last year, Underhill [1] directed attention to the circulatory conditions attending the formation of the pulmonary edema due to lethal war gases. An early period of blood dilution is followed by an interval during which the blood rapidly becomes concentrated to a point far beyond the normal value, and remains near this level for some time. Eyster showed that at this stage the heart may be markedly decreased in size, a result which would presumably tend toward decreased efficiency of this organ and lead to an inadequate circulation. The striking loss of fluid from the blood by transfusion into the tissue spaces and into the air passages of the lung may lead to reduction in blood volume, hemoglobin concentration and decrease in heart size to somewhat extreme degree, as has lately been reemphasized by Meek and Eyster [2] of the University of Wisconsin. They agree with Underhill that death ultimately results from decreased oxygenation of the pulmonary blood and from oxygen starvation of the tissues due to decreased blood volume, the latter probably being the more important.

Impaired respiratory function of the blood owing to deficiency in corpuscles and oxygen-carrying hemoglobin is emphasized daily in medical practice. The possibility of an impairment with the same outcome but due to decrease of the circulating medium as a whole has not been so generally recognized. Underhill has proposed that as a fundamental principle in the therapeutics of such edemas the blood concentration should be diminished or prevented, if possible. This may be accomplished experimentally by infusion of sodium chlorid solution, by intraperitoneal injections of the latter, and even by oral administration of water. The lack of oxygen due to a reduced circulation further impaired by the increased viscosity of the concentrated blood can be remedied in part by administration of oxygen. This is, of course, a palliative, as it cannot reduce the edema or restore alveolar epithelium if the latter has been damaged. It may serve, however, to help avert tissue asphyxiation until the fundamental defect of decreased blood volume can be remedied. It will be interesting and important to learn in what conditions this more recently recognized blood concentration occurs in pulmonary edema during times of peace. The possibilities of therapy suggested for the alleviation of suffering from the edema due to war gases can then perhaps find application.

1. Underhill, F. P.: The Pathology and Experimental Treatment of Poisoning with the Lethal War Gases, Arch. Int. Med. **23**: 753 (June) 1919.

2. Meek, W. J., and Eyster, J. A. E.: Experiments on the Pathological Physiology of Acute Phosgene Poisoning, Am. J. Physiol. **51**: 303 (March) 1920.

THE SPHINCTER OF THE COMMON BILE DUCT

The opening of the common bile duct into the duodenum is ordinarily closed by a sphincter. On this account the bile, which is formed more or less continuously by the liver, discharges into the bowel only at periods when the muscle closing the orifice of the duct is relaxed or inhibited. In the intervals between the periodic passage of bile into the intestine, the fluid secreted is stored away in a quiescent gallbladder. Meltzer [1] has compared the mechanism of the gallbladder with that of the urinary bladder. In the latter the collection and evacuation of the urine is controlled by the antagonistic activities of two muscles of the bladder. During the accumulation of urine in the bladder, the detrusor muscle is relaxed and the sphincter is tonically contracted; whereas during micturition, the reverse takes place: the detrusor contracts and simultaneously the tonus of the sphincter at the neck of the bladder becomes inhibited. Comparably, according to Meltzer, the muscle fibers of the gallbladder and those about the papilla of Vater are antagonists. During the absence of flow into the bowel, the muscle fibers in the papilla are contracted and those of the gallbladder are inhibited; during the discharge, the gallbladder contracts and Oddi's muscle is relaxed; the bile has then no other way out but into the duodenum.

If this conception of the functions of the bile-storing organ leading to periodic discharge of bile into the

1. Meltzer, S. J.: The Disturbance of the Law of Contrary Innervation as a Pathogenetic Factor in the Diseases of the Bile Ducts and the Gallbladder, Am. J. M. Sc. **153**: 469 (April) 1917.

duodenum is correct, it is obvious that failure of appropriate action in any part or disturbance in the nice correlations involved may lead to pathologic consequences. The occurrence of stasis through imperfect behavior of the sphincter closing the common bile duct is at once suggested; and the mention of stagnation of the bile at once calls to mind secondary complications that may ultimately lead to mechanical obstruction in biliary flow.

In view of these considerations, it is surprising that so little attention has been paid to the physiology of the sphincter which Oddi [2] described, in 1887, as occurring at the termination of the common duct. Until recently, many clinicians have actually declined to attach any importance to the muscular structure to which we have referred. As recently as 1900 Naunyn,[3] a recognized expert in the field of biliary pathology, regarded it as worth while to emphasize the significance of the choledochoduodenal sphincter in connection with the filling of the gallbladder, and the possible dangers of an exaggerated tonus in the musculature. Recently, Mann [4] of the Mayo Clinic has shown, what might perhaps be suspected from physiologic reasoning, that the tonus of the sphincter at the duodenal end of the common bile duct is decidedly more vigorous in species that have a gallbladder than in animals that normally lack this organ. In the latter species, the sphincter would not withstand pressure of more than slight intensity at the most. While anatomic studies have shown that a sphincter is present in each species lacking a gallbladder, the sphincter does not seem to function appreciably. Obviously, when there is lack of a gallbladder for storage of bile, stasis produced by a resistant sphincter might soon induce serious difficulties.

A study which Reach [5] of Vienna has lately published shows anew that the sphincter of the common bile duct can be influenced reflexly in various ways. According to him, filling the stomach tends to maintain a closed duct orifice; as the stomach empties, the sphincter relaxes and the bile is discharged. Whatever inhibits this sphincter and empties the bile passages must reduce the pressure in the gallbladder, a fact of importance when it is desired to facilitate the healing of fistulous openings in this organ. According to Reach, drugs also can act on the tonicity of the sphincter; some, like papaverin and scopolamin, inhibiting, while others, such as morphin, are able to stimulate the muscle to close the orifice. These tentative pharmacologic findings deserve to be elaborated to the point at which their possible application in human therapy can be ascertained; for occasional instances undoubtedly arise in which failure of relaxation of the sphincter of the common duct, particularly during contraction of the gallbladder, needs to be counteracted.

2. Oddi: Arch. ital. de biol. **8**, 1887.
3. Naunyn, B.: Die heutige Lehre der Cholelithiasis, Therap. d. Gegenw., 1900, No. 9.
4. Mann, F. C.: A Study of the Tonicity of the Sphincter at the Duodenal End of the Common Bile Duct, J. Lab. & Clin. Med. **5**: 107 (Nov.) 1919.
5. Reach, F.: Der Schliessmuskel des Ductus choledochus in funktioneller Beziehung, Arch. f. exper. Path. u. Pharmakol. **85**: 178 (Nov.) 1919.

THE RÔLE OF LYMPHATICS IN PNEUMONIC INFECTION OF THE LUNGS

In a recent issue,[1] evidence for the bronchiogenic character of the lobar pneumonia produced experimentally in monkeys by Blake and Cecil was reviewed. It is apparent from their studies that the respiratory tract, rather than bacterial invasion of the blood, is the primary factor in the genesis of the disease so closely related to the comparable malady in man. When the lining mucosa of the trachea is damaged and the protective mechanism of the respiratory tract is impaired, a portal of entry for micro-organisms associated with pneumonia is obviously afforded. This is undoubtedly what happens as a consequence of the inhalation of pulmonary irritating gases, as has been pointed out by Winternitz.[2]

Blake and Cecil [3] produced their experimental results by intratracheal inoculation of the animals through needle puncture. They apparently assumed that no damage was produced by this procedure; hence the pneumonia seems to have started despite an unharmed and normally adequately protective mucosa. Winternitz, Smith and Robinson [4] of the Yale School of Medicine have pointed out, however, that in such inoculations the needle, though sterile on entry, is unquestionably infected when it is withdrawn, and consequently a possible path of infection to the lung may be found elsewhere than through the lumen of the trachea.

In harmony with this assumption, the submucosa of the trachea and bronchi has been demonstrated by the New Haven investigators to furnish a pathway of infection to the lung. It contains a rich plexus of lymphatics prominent everywhere and devoid of valves. There is a continuity throughout this lymphatic system so that bacteria which once find their way into it can easily spread. Although it thus affords a direct pathway of infection to the lung, Winternitz and his colleagues allege that it may also serve as a protective mechanism against pulmonary infection; for the drainage of the submucosa of the trachea and bronchi is largely diverted as the lung is approached to the protecting regional lymph nodes.

The spread of infection through lymphatic channels is probably more common than has been appreciated by most clinicians. The investigations of recent years

1. Experimental Lobar Pneumonia, editorial, J. A. M. A. **74**: 1168 (April 24) 1920.
2. Winternitz, M. C.: Experimental Studies on the Lesions Produced by Poisonous Gases, New Haven, Yale University Press, 1919.
3. Blake, F. G., and Cecil, R. L.: Studies on Experimental Pneumonia, I, Production of Pneumococcus Lobar Pneumonia in Monkeys, J. Exper. Med. **31**: 403 (April) 1920; II, Pathology and Pathogenesis of Lobar Pneumonia in Monkeys, ibid., p. 445.
4. Winternitz, M. C.; Smith, G. H., and Robinson, E. S.: An Unrecognized Pathway for Bacterial Invasion of the Respiratory Tract, Bull. Johns Hopkins Hosp. **31**: 63 (March) 1920.

have shown that progressive pyelonephritis is by no means always, if indeed it is commonly, dependent on direct transference of the micro-organism backward along the urinary channels from the distal parts of the latter first invaded. The little recognized lymphatics of the urinary organs may serve in this case as the paths of bacterial advance independent of the urine in the ureters. A further analogy is seen in the streptococcus lymphangitis of the finger which sometimes follows a needle puncture.

FACTORS AFFECTING THE CONSERVATION OF PROTEIN IN THE BODY

Soon after the signing of the armistice, when the first reports of the food stringency and the resulting malnutrition of the population of the Central Empires reached this country, the statements were looked on by many as a continuation of propaganda intended to secure amelioration of peace terms. Subsequent investigations have, however, furnished a verification of the threatening conditions that still exist abroad. Thus, in a recent issue of THE JOURNAL,[1] an experienced observer wrote that of 4,500 medical men in Vienna at least 90 per cent. are working on half rations, and many are actually on the point of starvation. Major Mason[2] of the Sanitary Corps, U. S. Army, reviewing the situation, remarks that "for the first time in history the world at large faces a universal food shortage. Heretofore scarcity of food has been only local, the famines of India and Ireland being well-known examples, and in these cases it was always possible for other countries to get food to the lands of shortage. Today there seems reason to believe that in the whole world there is not all the food which could be consumed by all the people."

The undernourishment that has ensued abroad involves not only reduction of fat but also a loss of protein from the body. Restoration of adequate nutritive conditions will require renewal of the store of protein, that foodstuff which the war stringency has made the scarcest of all. Recently it has been asserted[3] that the mineral metabolism of the body plays an important part in the intensity of the protein destruction, the contention being that potential acidity of the diet tends to increase, whereas a preponderance of base-forming food tends to curtail the protein breakdown.

If this assertion should prove true, its bearing on the nutrition of those restricted to minimal intakes of protein is obvious. Careful consideration of the acid-base relationships of the diet would then be desirable to assure a maximum conservation of bodily tissues when the supply of protein is below the optimum. A reinvestigation of the question by Jansen[4] in Friedrich Müller's clinic in Munich disposes of the assertion. He has found that even the addition of inorganic acid to a diet of low protein value does not alter the output of nitrogen in the urine. The fecal output may be slightly augmented, owing to the action of acid in provoking alimentary secretions; but, broadly speaking, under usual dietary conditions the acid or basic potentialities of the food are without practical significance in the maintenance of protein equilibrium. The partition of nitrogen in the urine, as indicated by greater or less participation of ammonia in its output, may be altered; not, however, the total metabolism. In times of stress, therefore, protein is best conserved by the liberal ingestion of carbohydrates, not by a readjustment of the acid-base balance of the diet. And this is what the classic students of nutrition have long taught.

1. Wilbur, R. L.: Conditions in Vienna, Correspondence, J. A. M. A. **74**: 967 (April 3) 1920.
2. Mason, C. C.: German Nutrition, 1914-1919, Bull. Johns Hopkins Hosp. **31**: 66 (March) 1920.
3. Berg, R.: Die Nähr- und Genussmittel, Dresden, 1913; Die Bewertung der Säureverteilung im Harn. München. med. Wchnschr., 1914, No. 23. Röse, C., and Berg, R.: Ueber die Abhängigkeit des Eiweissbedarfs vom Mineralstoffwechsel, ibid., 1918, No. 37.
4. Jansen, W. H.: Zur Frage der Abhängigkeit des Eiweisstoffwechsels vom Säuren-Basengehalt der Nahrung, Ztschr. f. klin. Med. **88**: 221, 1919.

Current Comment

ARCHIVES OF SURGERY

For a number of years the proposal to publish a high-class journal devoted to surgery has been before the Board of Trustees of the American Medical Association. The final decision to publish such a journal has been delayed from time to time, partly because of the war, and partly because some believed there was no real need for a surgical journal. But criticism has been advanced that American surgery is not developing symmetrically, that the technical side —operative surgery—has been highly developed at the expense of the investigative and philosophical sides, and that there is a real need for a journal to represent these phases of surgery as a science. The Board of Trustees finally decided to publish such a journal, and the action of the Trustees was approved by the House of Delegates at the New Orleans meeting. At the outset it will be issued bimonthly. Papers dealing with experimental work will be accepted and space allowed for protocols which have a direct bearing on, or an explanatory relation to, the problem considered. Articles will be welcomed which deal with clinical research in the hope of stimulating more careful and closer clinical examination. The value of laboratory methods has been rightly emphasized, but unfortunately in many instances to such an extent that the ability and desire to make close clinical observations have been lessened or lost. The value of monographic publication cannot be denied, and whenever a monograph is of sufficient value an entire number, if necessary, will be given to it. In a word, this new journal —*Archives of Surgery*— will be devoted to the advancement of American surgery, in the same way as the other special journals published by the American Medical Association are devoted to the advancement of the specialties they represent: Internal

Medicine, Diseases of Children, Neurology and Psychiatry, and Dermatology and Syphilology. The personnel of the editorial board consists of Dr. Hugh Cabot, professor of surgery, University of Michigan, Ann Arbor; Dr. Thomas Cullen, professor of gynecology, Johns Hopkins University, Baltimore, Maryland; Dr. William Darrach, professor of surgery, Columbia University College of Physicians and Surgeons, New York City; Dr. Evarts A. Graham, professor of surgery, Washington University, St. Louis, Missouri; Dr. Dean D. Lewis, professor of surgery, Rush Medical College, Chicago, and Dr. W. J. Mayo, the Mayo Clinic, Rochester, Minn. The positions in American surgery of the group of men who have accepted the responsibility for the editorial standard of the new journal will indicate its scientific scope and character. Coming from the press of the American Medical Association it is unnecessary to say that it will be, mechanically and typographically, equal to any similar publication in any language. This will especially apply to the illustrations: drawings, photomicrographs, half-tones, in color or in black and white, will be liberally used. The first number will appear, July 1.[1]

STOMACH GASES AND AEROPHAGY

The occurrence of gases in abnormal quantities in the gastro-intestinal tract is familiar through the frequent clinical observation of meteorism and tympanites. Most of the available analyses of intestinal gases indicate that nitrogen, methane, hydrogen and carbon dioxid may be present, while hydrogen sulphid and oxygen are sometimes added to the list. It has generally been assumed that the nitrogen and oxygen represent residual parts of atmospheric air swallowed with food; carbon dioxid may be derived from the blood, whereas the other gases mentioned are products of fermentative changes induced by micro-organisms always present in the alimentary canal. In aerophagy, or the increased swallowing of air, sometimes occurring as a nervous performance in hysterical persons, part of the gases may be eructated again, though frequently some of the air passes farther into the bowel. The clinician regards the presence of the gases in the intestine as an undesirable symptom that needs therapeutic attention whenever the local accumulations cannot escape properly and tend to produce distention. Aside from this aspect of the subject, little consideration has been given to the occurrence of gases in the stomach.[2] By studying the content of carbon dioxid in the stomach gases of air-swallowing infants, Ylppö[3] came to the conclusion that the carbon dioxid at least was derived by diffusion from the blood. Further investigations on adults have demonstrated that various gases, whether represented by atmospheric air, pure oxygen or carbon dioxid, when introduced even in considerable volume into the stomach, soon come into equilibrium with the blood gases as represented in the alveolar air. Thus, at the end of an hour the percentage of carbon dioxid and of oxygen in the stomach gases and alveolar air are usually almost identical. When air has been introduced into the stomach, flatulence will result because of the residual nitrogen. This is not the case when carbon dioxid is introduced; and with oxygen it happens only when the intake is very large—more than 1,000 c.c. As the gases have thus been shown to behave toward the alimentary wall in accord with physical laws of diffusion, it has been estimated that not negligible amounts of oxygen might be introduced into the body by way of the gastro-intestinal tract under circumstances in which pulmonary respiration is severely impaired by disease. At best, however, the total quantity would represent only a small fraction of the day's need of the indispensable element.

1. See announcement, advertising page 10, this issue.

2. A few data will be found in: Hoppe-Seyler: Zur Kenntnis der Magengärung mit besonderer Berücksichtigung der Magengase, Deutsch. Arch. f. klin. Med. **50**: 83, 1892. Leo: Ueber den gasförmigen Mageninhalt bei Kindern im Säuglingsalter, Ztschr. f. klin. Med. **41**: 108, 1900. Loening: Das Verhalten der Kohlensäure im Magen, Ztschr. f. klin. Med. **56**: 26, 1905. Quest: Untersuchungen über Darmgase bei Säuglingen mit Tympanites, Jahrb. f. Kinderh. **59**: 293, 1904.

3. Ylppö, A.: Ueber Magenatmung beim Menschen, Biochem. Ztschr. **78**: 273 (Jan.) 1917.

A PEDIATRICIAN OF THE SECOND CENTURY

According to a recent publication,[1] during the reign of Trajan, between 110 and 130 A. D., Rome was the home of the greatest obstetrician and pediatrician of antiquity—Soranus of Ephesus. At the eleventh International Congress in Rome, 1895, I. V. Troitski, writing in Russian, compared in parallel columns the practices of Soranus with the teachings of authorities of his own time. The survey of what Soranus knew is again an appeal for the study of medical history, for if we exclude innovations resulting from our knowledge of antiseptics, the practical advice which he gave might well serve for modern use. His instructions as to breast nursing and the care of the wetnurse are delightfully worded. "The essential mental qualities of a good nurse," he says, "are patience, common sense, good nature or gentleness and neatness." These essential qualities have not changed. Again, "Feeding at irregular intervals and often during the day, and especially during the night, may be the cause of sickness in the infant." Every pediatrician will confirm this view. His suggestions as to the causes of crying, and how to differentiate between the various causes, appear much the same as those in our modern "baby books." None of the earlier writers on medical subjects so well appreciated, as did Soranus, the importance of feeding in the care of the infant. He made one suggestion typical of the customs of his time, namely, that wetnurses be employed rather than having the mother nurse her own infant. This advice was based on the theory that the mother might be physically unable, after parturition, to nurse the infant, and no doubt also on the fact that mothers, in his time, were notoriously dissipated. Parenthetically, it may be remarked that Soranus seems to have had a wealthy clientele.

1. Foote, J. A.: An Infant Hygiene Campaign of the Second Century, Tr. Am. Child Hygiene Soc., 1919, p. 129.

Dust and Health.—Dust from abrasive materials does not render a worker unconscious or cause him visible distress, but it accomplishes its harmful effects without unduly alarming or exciting any one.—P. M. Holmes, *Pub. Health Rep.*

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Personal.—Dr. Milton Jacobs of the staff of the Elgin State Hospital and who has also had charge of the examination of subnormal children of Elgin schools has resigned and will enter general practice in Elgin.——Dr. Arthur F. Stotts, Galesburg, who has been under treatment in a hospital since May 8, has returned home much improved.

Chicago

Surgeons Elect Officers.—At the annual meeting of the Chicago Surgical Society, June 4, Dr. William Fuller was elected president; Dr. Vernon David, vice president; Dr. Frederick G. Dyas, secretary, and Dr. Charles F. Sawyer, treasurer.

Legion Post Dinner.—Chicago Medical Post No. 216, American Legion, announces an informal round-up dinner to be given June 23, at 6:30 p. m., in the gold room of the Congress Hotel, at which Dr. Joseph B. Miller will officiate as toastmaster.

Physicians Ask Health Plan.—The Chicago Community Trust is asked to undertake a city plan of health to include all phases of public health and provision for the care of the sick and physically disabled by resolutions adopted at the meeting of physicians and health workers at the Chicago Club, May 28. Among those who spoke on this occasion were Drs. James B. Herrick, Edwin W. Ryerson, Harry E. Mock, E. O. Jordan, Joseph B. DeLee and John Ritter.

KENTUCKY

Alumni Clinic.—At the week of clinics held in honor of the alumni of the medical department of the University of Louisville, from May 31 to June 5, there were 285 members registered, and 376 attended the banquet the evening prior to the commencement exercises, at which a class of twenty-nine received diplomas. On the first evening, a joint meeting of the Jefferson County Medical Society and the alumni association was held, at which Dr. Frank B. Wynn, Indianapolis, delivered an address on "The Respiratory Sequelae of Influenza, a Clinico-Pathologic Discussion."

MARYLAND

Memorial at Fort McHenry.—Impressive Memorial Day exercises at Fort McHenry were held at the base of the old flag staff in the south fort on May 31. The ceremony closed with the lowering of the colors and the sounding of "taps." In addition to being a tribute to the soldier dead, the "taps" also sounded the passing of U. S. Army General Hospital No. 2, whose official existence ceased on that day. Dr. Thomas R. Payne, Corbett, will be superintendent under the new régime. Major James E. Baylis, M. C., U. S. Army, will continue as commanding officer.

Health Conference.—At the invitation of Dr. John S. Fulton, head of the state department of health, health officers throughout the state met at the Medical and Chirurgical Faculty Building, Baltimore, for a two-day convention, June 7 and 8. Dr. William H. Welch; Dr. Hugh H. Young; Miss Nellie F. Oxley, division director of public health nursing, Potomac division of the Red Cross; Dr. Paul B. Johnson, director of the department of health service, Potomac division of the Red Cross; Dr. William A. Bridges, medical representative, Maryland Tuberculosis Association; Dr. John M. T. Finney; Prof. Edward F. Webb and William J. Holloway, state superintendent of rural schools, were among the speakers.

Personal.—A portrait of Dr. William H. Welch, president of the University Club of Baltimore, was presented to the club at its last monthly meeting.——Dr. John M. T. Finney, Johns Hopkins University, was decorated with the insignia of an officer of the French Legion of Honor on behalf of the French government by the French military attaché in Washington, D. C., June 3. The decoration was given in recognition of Dr. Finney's ministrations to French soldiers in American hospitals overseas during the war.——Surg.Gen. Hugh S. Cumming, U. S. Public Health Service, was recently in Baltimore, accompanied by Drs. Claude H. Lavinder, William G. Stimpson and Richard H. Creel; and later with the mayor, Drs. John M. T. Finney, C. Hampson Jones, city health officer, and Winford H. Smith, superintendent of the Johns Hopkins Hospital, visited Fort McHenry to make a survey of the hospital facilities. The city authorities want a portion of the equipment at the fort for municipal hospital purposes, temporarily, if it cannot be arranged as a permanent thing, and the survey was made with this in view.

MASSACHUSETTS

Centenary of Medical Missions.—The centenary of the founding of medical missions was celebrated, May 9, at the all-student rally held in the new Old South Church, Boston, when President Ellen W. Pendleton of Wellesly College, Cyril Haas, Frances J. Heath, Cora J. Patton and Mrs. Henry W. Peabody told the story of medical missions from the time, in 1819, when Rev. John Scudder and his wife sailed from America to begin their work in Ceylon.

Personal.—Dr. Benjamin White has been appointed director of the division of biologic laboratories of the Massachusetts State Department of Health, succeeding Dr. Milton J. Rosenau. Dr. White has also been appointed lecturer in immunology in the Massachusetts College of Pharmacy, and assistant in the department of preventive medicine and hygiene at Harvard University Medical School.——Dr. Lawson G. Lowrey, chief medical officer of the Boston Psychopathic Hospital for two years, has been appointed assistant professor in the psychopathic department of the University of Iowa, Iowa City.

MISSOURI

Eye, Ear, Nose and Throat Section Organized.—An eye, ear, nose and throat section of the Buchanan County Medical Society was organized at St. Joseph, March 10. Dr. Pierre I. Leonard was elected chairman, and William L. Kenney, secretary of the section.

Personal.—Dr. and Mrs. Clinton B. Ellis, Kansas City, have sailed for Europe.——Dr. James W. Bruton, Ozark, has been appointed deputy health commissioner for Christian County.——Dr. L. Paul Forgrave, St. Joseph, has been elected a member of the board of health of St. Joseph.

NEW JERSEY

Illegal Practitioners Fined.—A report states that John W. Glover of Bridgeton, who claimed to be a practitioner of the exanthematic method of cure of all chronic diseases, pleaded guilty to the charge of practicing medicine without a license and was fined $200.———Paul Schmidt of Newark was also found guilty of practicing medicine without a license and paid a fine of $200.

NEW YORK

Personal.—Dr. Clarence E. Cobb, Alfred, has been appointed superintendent of the Steuben County Tuberculosis Hospital, succeeding Dr. Elliott I. Dorn, Cassadaga.——Dr. Manna Mary Rohn, health officer of the Lake George Health District, is carrying on a complete sanitary survey of the shores of Lake George.

New Publication.—The state department of health began in March the publication of a monthly periodical known as the *Monthly Vital Statistics Review*, which is edited by Dr. Otto I. Eichel, director of the division of vital statistics of the board. The periodical is an attempt at a much more elaborate presentation of current official vital statistics than has heretofore been tried in this country. It presents a comment on the trend of vitality in the state, with tables showing influenza and pneumonia deaths, and death rates; deaths from all causes; general death rates given by months compared with previous years; infant mortality from 1913 to 1920; deaths of infants under 1 year of age; deaths and death rates from pulmonary tuberculosis, 1913-1920, and abstracts from the Weekly Health Index of the United States Bureau of Census.

New York City

Personal.—Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, will represent the United States at the first formal meeting of the medical advisory board of the League of Red Cross Societies at Geneva, July 5.

New Brooklyn Hospital Dedicated.—The Brownsville and East New York Hospital, located at East Ninety-Eighth Street and Rockaway Park, which was erected and equipped

at a cost of about $325,000, has been dedicated and is ready to receive patients.

Sanitary Code Affecting Drugs Amended.—Subdivision 2 of Section 116 of the Sanitary Code has been amended so that any drug is regarded as adulterated "if its strength or purity falls below, or its strength is in excess of, the professed standard under which it is sold."

Physician Fined.—Dr. Arthur H. Stern, Manhattan, arrested in a raid, July 19, 1919, by revenue agents, charged with violation of the Harrison antidrug act, is said to have pleaded guilty before Judge Angus M. Hand, May 26, and to have been fined $5,000, and committed to the custody of the United States marshal for one day.

Registration of Patent and Proprietary Medicines.—Owing to enforcement of Section 117 of the Sanitary Code, the Division of Patent and Proprietary Medicines of the Bureau of Food and Drugs of the New York City Department of Health, has recently had a large number of patent and proprietary preparations submitted for registration, and a number of preparations have been withdrawn from sale, as the claims made for them were exaggerated and false and the accompanying statements misleading. During the influenza epidemic, pharmaceutical manufacturers took advantage of the anxious state of the public and advertised various products for the prevention and cure of the disease. These advertisements in the daily papers and elsewhere were ordered discontinued under pain of prosecution by the health department, and the orders have been promptly obeyed.

Bulletin of the New York Association for Medical Education.—This organization, incorporated under the laws of New York State in August, 1919, for the purpose of expanding medical education for students and graduates of medicine has issued its first bulletin, which consists of a report of the subcommittee on ophthalmology and oto-laryngology, of which Dr. James F. McKernon is chairman, and Drs. Arnold Knapp, Cornelius G. Coakley and Frederick Whiting are members. This report formulates the requirements necessary to educate and train physicians who desire to become specialists in the department of ophthalmology, rhinolaryngology and otology. All the details of a standard course in this department and also of graduate courses of instruction are outlined and are now available. Those interested in these courses can obtain further information at the headquarters of the association, 17 West Forty-Third Street, New York.

NORTH CAROLINA

Hospital to Be Built.—The Crowell Urological Clinic, Charlotte, has purchased a lot adjoining the Charlotte Sanatorium on which to build an office and hospital building. The hospital portion of the building will be divided into the urologic and dermatologic departments of the sanatorium.

OHIO

Illegal Practitioner Fined.—A report from Ohio states that on May 21 George Gueth, Sidney, pleaded guilty to practicing medicine without a license and was fined $25 and costs.

Health Commissioners Elect Officers.—At the meeting of health commissioners of the state held in Columbus, May 12 to 14, the following officers were elected to serve on the commission to enforce milk and dairy regulations for all cities and counties throughout the state: president, Dr. William T. Peters, Cincinnati; vice presidents, Drs. John A. Kappelman, Canton, Oral J. Tatje, Portsmouth, and Harley J. Powell, Bowling Green, and secretary-treasurer, Dr. Rush R. Richison, Springfield.

PENNSYLVANIA

Philadelphia

Personal.—Dr. William W. Keen has been elected an honorary fellow of the Royal Society of Medicine, London, and of the American Surgical Association.——Dr. Edward T. Reichert, professor of physiology in the Medical School of the University of Pennsylvania, has retired from active service.——Dr. and Mrs. James A. Irwin sailed for France, June 12.

University Graduate School Budget.—Trustees of the University of Pennsylvania have decided to take steps, further to equip and advance the work of the university graduate school of medicine. At the last meeting of the board of trustees, a budget of $158,097.37 was approved to meet such expenses as are not provided in the regular income of the graduate school of medicine.

Phipps Institute to Continue.—Dr. Charles J. Hatfield, executive director of the Henry Phipp Institute, announced on May 29 that the result of the recent drive for funds made by that institution is such as to assure the continuation of the institution until July 1, 1921. This is made possible by the liberality of the family of Henry Phipps who have made available the interest on the $500,000 recently promised by them for the endowment fund. The sum of money contributed in Philadelphia is approximately $45,000 to date.

Jefferson Alumni Banquet.—The annual banquet of the alumni association of Jefferson Medical College was held in the ballroom of the Bellevue-Stratford Hotel, June 4, with 300 present. Dr. S. Solis Cohen, president of the association, presided, and addresses were made by the following men: Dr. Albert E. Austin of Connecticut; Drs. F. X. Dercum, Franklin Spencer Edmonds, William Potter, president of the board of trustees; J. K. Weaver of Norristown of the class of 1867, the oldest graduate present, and Dr, Hobart A. Hare.

Symposium on Hygiene and Physical Training Teaching.—At the stated meeting of the College of Physicians of Philadelphia a symposium was held on the teaching of personal hygiene and physical training in our public schools, colleges and universities. Dr. Edward Martin, commissioner of health of Pennsylvania, Harrisburg, opened the symposium on the teaching of personal hygiene in the public schools of Pennsylvania, and Dr. R. Tait McKenzie, professor of physical education in the University of Pennsylvania, spoke on "The Importance of Teaching Personal Hygiene and Physical Education in our Colleges and Universities."

SOUTH CAROLINA

New State Officers.—At the annual meeting of the South Carolina Medical Association, held in Greenville, the following officers were elected: president, Dr. Washington P. Timmerman, Batesburg; vice presidents, Drs. Miles J. Walker, York, William A. Boyd, Columbia, and William W. Fennell, Rock Hill, and secretary, Dr. Edgar A. Hines, Seneca (reelected).

Personal.—Dr. George T. Swandale has resigned as a member of the Greenville Board of Health and has been succeeded by Dr. Charles W. Gentry.——Dr. Jean B. Laborde, Columbia, has been elected city physician, succeeding Dr. Clarence E. Smith, elected city health officer of Greenville. ——Dr. T. W. Smith has been elected a member of the board of health of Newberry, succeeding Dr. James K. Gilder, deceased.

Tuberculosis Association Meeting.—At the annual meeting of the South Carolina Tuberculosis Association, in Columbia, April 30, under the presidency of Dr. Reed Smith, Columbia, the following officers were elected: president, J. Nelson Frierson, Columbia; vice presidents, Drs. Richard M. Pollitzer, Charleston, and Ernest Cooper, Columbia; secretary, Dr. Reed Smith, Columbia, and treasurer, A. S. Manning, Columbia (reelected).

New Medical Board.—The governor has reappointed the following as the state board of medical examiners under the new act passed in the last session of the general assembly: first district, Dr. Joseph T. Taylor, Adams Run; second district, Dr. Josiah S. Matthews, Denmark; third district, Dr. Frank M. Lander, Williamston; fourth district, Dr. Baxter M. Haynes, Spartanburg; fifth district, Dr. Joseph R. Miller, Rock Hill; sixth district, Dr. George B. Edwards, Darlington; seventh district, Dr. Julius H. Taylor, Columbia, and state at large, Dr. A. Earle Boozer, Columbia.

SOUTH DAKOTA

Guilty of Manslaughter.—The jury considering the case of manslaughter against Dr. Oscar H. Clark, Newell, charged with the death of Alice Leuth, following an illegal operation, is said to have returned a verdict of guilty, May 17.

Clinic Building Ready.—The new Sioux Falls Medical and Surgical Clinic building, Eleventh and Minnesota Avenue, is expected to be ready for occupancy this month. The build- which has been constructed at a cost of about $100,000, is two stories in height and will be occupied by eight physicians of Sioux Falls.

State Society Meeting.—The South Dakota State Medical Association held its thirty-ninth annual session in Sioux Falls, May 18 to 20, under the presidency of Dr. Robert D. Alway, Aberdeen, and the following officers were elected:

president, Dr. Harry T. Kenney, Pierre; vice presidents, Drs. George S. Adams, Yankton, and Gilbert G. Cottam, Sioux Falls; secretary-treasurer, Dr. Frederick A. Spafford, Flandreau (reelected); delegate to the American Medical Association, Dr. Robert D. Alway, Aberdeen, and alternate, Dr. Theodore F. Riggs, Pierre. Aberdeen was selected as the next place of meeting.

TEXAS

Personal.—Dr. Douglas Largen, San Antonio, has been appointed assistant state health officer and has been placed in charge of the division of venereal diseases.——Dr. J. Q. Durham, Memphis, was seized with cerebral hemorrhage while driving his car, April 25, and is still seriously ill.——Dr. H. H. Terry and Julian Murchison have been appointed assistant city health officers of Fort Worth.

New Officers of State Society.—In addition to the officers of the State Medical Association of Texas, published in THE JOURNAL, May 8, page 1335, the following officers were elected: vice president, Dr. Willis J. Pollard, Kaufman; secretary, board of trustees, Dr. W. R. Thompson, Fort Worth (reelected); councilors, second district, Dr. Preston C. Coleman, Colorado (reelected); eighth district, Dr. Oscar S. McMullen, Victoria (reelected); seventh district, Dr. Joe C. Gilbert, Austin; ninth district, Dr. William B. Thorning, Houston, and tenth district, Dr. Murff F. Bledsor, Port Arthur (reelected); delegates to the American Medical Association, Drs. John M. O'Farrell, Richmond, Edward H. Cary, Dallas, and Holman Taylor, Fort Worth, and alternates, Drs. Murff F. Bledsoe, Port Arthur, and Robert W. Knox, Houston.

WASHINGTON

Presented Forged Credentials.—A report from the state board of medical examiners recently stated that a Dr. Francis J. Koler was licensed on credentials showing that he graduated from the University of Minnesota, June 5, 1915, and that he had been licensed in Minnesota in the same year. These statements were not verified by official data at the headquarters of the American Medical Association and a letter from Dean Lyon of the University of Minnesota Medical School stated positively that no such person had ever graduated from that institution. Statements to this effect were at once forwarded to the Washington board. It is now reported that on May 28, Mr. Koler admitted that his diploma and the reciprocity blanks, together with seals of the university and state of Minnesota, had been forged. He agreed to return the license thus fraudulently obtained. He then left for parts unknown. Other licensing boards will do well to be on the lookout for Mr. Koler.

GENERAL

General Gorgas Honored.—The knight commandership of the Order of St. Michael and St. George was recently conferred on Gen. W. C. Gorgas by King George of England. Dr. Gorgas is en route to make studies of yellow fever on the west coast of Africa.

Limit Liquor Prescription Issue.—In an effort to defeat the indiscriminate sale of liquor on physicians' prescriptions, Commissioner Williams of the Bureau of Internal Revenue, issued a ruling, May 28, limiting the number of prescriptions for physicians to 100 for each three months, excepting with "good cause."

Sanitarians Hold Meeting.—At the annual meeting of the Southern Sanitary Association, held in Charlotte, May 25, Spartanburg, S. C., was selected as the next place of meeting and the following officers were elected: president, Dr. Andrew J. Warren, Charlotte, N. C.; vice presidents, Dr. C. C. Hudson, Richmond, Va., and Mrs. Ruth A. Dodd, Columbia, S. C., and secretary-treasurer, Dr. E. C. Smith, Columbia, S. C.

Virginia and District Meeting.—At the annual meeting of the Medical Society of Northern Virginia and District of Columbia held in Alexandria, Va., May 19, Dr. George Tully Vaughan, Washington, D. C., was elected president; Dr. Arthur Hooe, vice president; Dr. William H. Davis, Washington, D. C., recording secretary; Dr. Joseph D. Rogers, Washington, D. C., corresponding secretary, and Dr. Robert S. Lamb, Washington, D. C., treasurer.

Grants for Research.—The committee on grants of the American Association for the Advancement of Science has made a grant of $100 to Prof. Theodore Hough of the University of Virginia, Charlottesville, in support of his studies with Dr. J. A. Wardell on blood changes after severe hemorrhages, and of $150 to Prof. Carl J. Wiggers of Western Reserve University, Cleveland, in support of his investigations of the cardiac function by optical registration.

American Pediatric Society Elects.—The American Pediatric Society, at its thirty-second annual meeting held in Highland Park, Ill., May 31 to June 2, elected the following officers: president, Dr. John Howland, Baltimore; vice president, Dr. Charles A. Fife, Philadelphia; secretary, Dr. Howard Childs Carpenter, Philadelphia; treasurer, Dr. Charles Hunter Dunn, Boston, and recorder and editor, Dr. Oscar M. Schloss, New York City.

Fellowships Offered.—Four fellowships of $1,200 each have been offered by Julius Rosenwald of Chicago to negro graduates for advanced medical studies. The fellowships thus far announced are Drs. George W. James, Jr., Howard University, 1918; Theodore K. Lawless, Northwestern University Medical School, 1919; W. S. Quinland, Meharry Medical College, 1919, Harvard Medical School, 1919-1920, and Carrie D. Sutton, Howard University, 1920.——A $1,000 fellowship is offered by the Child Health Organization of America, New York City, for the best plan and outline for interesting children in the establishment of health habits.

Using the Automobile Emblem.—Hon. S. S. Horn, mayor of Easton, Pa., has addressed a letter to the members of the medical profession of that city urging them to mark their cars with the Caduceus so as to permit traffic officers to recognize physicians' cars. The mayor recognizes that many times a physician's car should be granted certain privileges which are not permitted except for fire apparatus and ambulances. Mr. Horn knows that it is impossible for a traffic officer to recognize every physician or know their cars. Consequently, he feels it would be of great advantage to have an emblem which will mark physicians' cars. He suggests the use of the automobile emblem provided by the American Medical Association for marking the cars of all legally qualified practitioners of medicine.

Warning Against Untried Medicaments.—The U. S. Public Health Service has issued a bureau circular regarding the use of arsenic preparations in the treatment of syphilis, in which it invites attention to the extensive exploitation through advertisements in professional journals and elsewhere, of various arsenic preparations which are not related to the arsphenamin group but which are sold with unwarranted claims as to their value in the treatment of syphilis. In the opinion of the bureau, the subcutaneous, intramuscular or intravenous use of arsenic in the treatment of syphilis should be confined to the arsphenamin group, as these agents are now of established value and are produced under the regulations of the Public Health Service. These agents are now manufactured by the following licensed firms: Dermatological Research Laboratories, 1720 Lombard Street, Philadelphia; H. A. Metz Laboratories, 122 Hudson Street, New York City; Diarsenol Company, Inc., Buffalo; Takamine Laboratory, Clifton, N. J., and the Lowy Laboratory, Newark, N. J. Provision is made for the experimental use of any preparation under conditions which will make the results of the experiment available to others than the physician immediately concerned.

Research Council Election.—The National Research Council, a cooperative organization of leading scientific and technical men of the country for the promotion of scientific research and the application and dissemination of scientific knowledge for the benefit of the national welfare, has elected the following officers for the year beginning July 1: chairman, H. A. Bumstead, professor of physics and director of the Sloane physical laboratory, Yale University; vice chairmen, C. D. Walcott, president of the National Academy of Sciences and secretary of the Smithsonian Institution; Gano Dunn, president of the J. G. White Engineering Corporation, New York, and R. A. Millikan, professor of physics, University of Chicago; permanent secretary, Vernon Kellogg, professor of biology, Stanford University, and treasurer, F. L. Ransome, treasurer of the National Academy of Sciences. The council was organized in 1916 under the auspices of the National Academy of Sciences to mobilize the scientific resources of America for work on war problems, and reorganized in 1918 by an executive order of the President on a permanent peace-time basis. Although cooperating with various government scientific bureaus it is not controlled or supported by the government. It has recently received an endowment of $5,000,000 from the Carnegie Corporation, part of which is to be expended for the erection of a suitable building in Washington, D. C., for the joint use of the coun-

cil and the National Academy of Sciences. Other gifts have been made to it for the carrying out of specific scientific researches under its direction.

Status of Sheppard-Towner Maternity Bill.—A distinct step toward the passage of the Sheppard-Towner Maternity and Infancy Bill has been accomplished by the favorable report on this measure which has just been made to the Senate from the Committee on Public Health and National Quarantine. The bill provides for cooperation on the part of the national government with the several states in the care of maternity and infancy cases and provides for studies, investigations and reports thereon. It sets aside $480,000 each year, of which $10,000 is to be paid annually to each state for carrying out the provisions of the act. It creates the Federal Board of Maternal and Infant Hygiene for the purpose of administration of the law. This board shall consist of the Secretary of Labor, the chief of the Children's Bureau, the Surgeon-General of the Public Health Service and the commissioner of education. The bill appropriates the sum of $2,000,000 for the next fiscal year in carrying on this cooperation work among the states and proposes appropriations for each succeeding year to 1925 in the sum of $3,600,000. Before any state can secure the benefits of these appropriations, the legislature of such state is required to authorize the creation of a state board of mental and infant hygiene which will cooperate with the federal board. It is also provided that the cooperative work in promoting the care of maternity and infancy shall consist of instruction in the hygiene of maternity and infancy through public health nurses, consultation centers, and other suitable methods, and the provision of medical and nursing care for mothers and infants at home or at a hospital when necessary, especially in remote areas; and this work shall be carried on in such manner as may be mutually agreed on by the federal board and any state receiving the benefits of this act. The report of the committee in support of the bill was made by Senator France of Maryland. It says in part:

The testimony brought out that it is safer to be a mother in 14 important foreign countries than here in our own country. In 1918 23,000 mothers died from causes connected with childbirth and nearly a quarter of a million babies died under 1 year of age. Most of these deaths are preventable. It was further brought out that the protection of the child must begin with the protection of the mother. Care during pregnancy and confinement and instruction in the hygiene of maternity, infancy, and childhood must be made available for all mothers through such agencies as prenatal clinics, maternity hospitals, maternity care in the home, children's health centers, and systems of public health nursing adequate to reach every mother and child.

This neglect of maternity and infancy leads not only to thousands of preventable deaths but to lowered vitality and permanent impairment of health and efficiency for thousands of women and infants who survive. The Children's Bureau's studies in rural areas in six different States have revealed:

1. High maternal mortality rates, above the average for the United States as a whole.

2. The fact that 80 per cent. of the mothers had received no advice or trained care during pregnancy.

3. Many mothers had no trained attendants of any kind at confinement.

4. Inaccessibility and often entire lack of hospitals, doctors, and nurses.

5. Practically no organized effort to meet the need for instruction in prenatal and infant hygiene and for trained care during pregnancy and confinement.

6. An almost prohibitive cost for providing adequate care at confinement in scattered and isolated rural districts. The very districts where advice and supervision during pregnancy and better help at confinement are most needed are the ones least able to obtain it without financial aid.

Of more than 22,000 city babies studied by the Children's Bureau and representing every type of home in seven cities more than three-fifths were born into families where the fathers' earnings were below the amount which was at that time the minimum for providing the bare necessities of existence. Only 1 in 10 was in a family where the father's earnings reached a fair minimum for comfort.

The problem is not local or sectional, but nation-wide, and federal action, therefore, is urgently needed. This bill offers a practicable method of cooperation between the federal government and the states. Such a method is already successfully operating in promoting agricultural work, vocational education, and the building of good roads.

Testimony on file from governors of 33 states and mayors of many large cities indicates that the states are ready and eager to avail themselves of the provisions of this bill.

Medical experts testified that with the most ordinary nursing care given to mothers and the services of a nurse who will supervise and instruct the pregnant woman, the death rate in the first month of life can be reduced one-half or two-thirds. It has frequently been found that among babies of supervised women there is a death rate not exceeding 18 or 19 per cent., as contrasted with 40 per cent. of the babies of the women of the same class who are unsupervised.

Such care bears results immediately and almost with mathematical certainty, and there can be no question whatever that the women in rural communities should no longer bear the onus of having to consider themselves outcasts, as it were, and not be able to avail themselves of the same kind of treatment that is at the service of certain city mothers.

Statistics have shown in New York City that, beginning five years after the commencement of work to reduce infant mortality, the effect was felt and the death rate under 5 years of age has been progressively lowered so that now the reduction in infant mortality is greater and the sickness rate is lower than it has ever been under 1 year of age. In other words, these children are not only saved to be alive at the end of the first year but are protected from physical defects, ill health, underdevelopment, and general physical deterioration in later life.

This bill equalizes the opportunities of mothers everywhere to receive suitable instruction in child hygiene in terms which they can understand, and provides for their care by those who are suitably trained. It also provides for methods of cooperation between various Government departments which have been dealing with certain phases of child welfare.

The representatives of Democratic and Republican women, and the League of Women Voters testified to the need of impressing upon lawmakers and politicians that the government has a responsibility for the care of mothers and babies. The greatest duty of government, the real purpose for which it exists, is to promote the general welfare.

Heretofore Congress has appropriated large sums for hogs and cattle. It is not because men think more of hogs and cattle than they do of babies that they vote $47,000,000 for them and nothing for the little ones, but because they have been thinking of the father's end of the problem. They have not seen that there was another side to the problem that was just as much the public business, namely, right conditions surrounding mothers and babies at home. Mothers will always think of the baby first. They are made that way; that is why it is a good thing for women to be in politics at this particular stage of the world's history, when conservation of life is so important.

There is no difference of opinion among the women as to the necessity for this measure. Furthermore, they have great confidence in the administrative feature of this bill, which provides that it shall have as its administrative officer the Chief of the Children's Bureau. They feel strongly that this is a woman's question and they heartily approve of the legislation which proposes to give the administrative function of the bill to a woman, who is the Chief of the Children's Bureau and who has already done so much for the children of the Nation.

Other speakers testified that the death rates of babies within the United States vary from those which are exceedingly unfavorable, according to the care available for mother and child. Rural isolation, civic neglect, low income, ignorance, are among the chief accompaniments of high infant mortality in the United States.

Plainly, it is for the public interest that young life and maternal life should be conserved. But in order to give an approximately fair chance for life for every child born, it is impossible to rely solely upon local funds and initiative, otherwise the figures would not show the present extreme variations in localities of varying resources.

This bill recognizes that the family is the social unit, and that upon its physical, mental, and moral adequacy depends national progress. Family well-being involves many services, among them those of teacher, physician, nurse, and social economist.

The ground for this work is already broken in two-thirds of the states at least, the seed is already planted in the hearts of the executives, and only the stimulus of federal action is needed to make the work flourish.

It can not be ignored that the rising thought throughout the world recognizes that all life is precious, that life which is creating life is doubly precious, and that the mothers and infants must be protected.

This committee believes that Congress should take prompt action on this measure. It has been said that the 23,000 mothers who died from causes connected with childbirth in 1918 and the 250,000 infants comprised a total casualty list that is as large as our total casualty list during the war.

Congress should not be passive in the face of this great loss, not only economic but social and moral as well. We believe that the United States should be pulled up from its present ignominious position as a squanderer of mothers and babies.

CANADA

Personal.—Dr. Richard J. Harding, McGill University, has been appointed professor of chemical pathology in the University of Toronto by the board of governors of the university.——Dr. Daniel Murray has been reelected mayor of Campbellton, N. B.——Dr. William G. Anglin, Kingston, has been appointed surgeon to the provincial penitentiary, Portsmouth.

Alumnae Meet.—The annual meeting of the Women Medical Alumnae of Queens Medical College was held in Toronto, and the following officers were elected: honorary president, Dr. Augusta Stowe Bullen; president, Dr. Katherine Woodhouse; vice presidents, Drs. Isabella Smith Wood, Annie Saeveth Higbee, Grand Prairie, Alta., and Dorothea A. Orr, Toronto; secretary, Dr. Edna Robertson, and treasurer, Dr. Edna M. G. Guest, Toronto.

LATIN AMERICA

Children's Outing Station in Argentina.—The Buenos Aires municipal authorities have opened a vacation colony for the sickly children of the city.

Government Sanatoriums in Santo Domingo.—The government of Santo Domingo has begun the necessary steps for the construction of a number of sanatoriums in different parts of the country.

Public Health Appropriation in Paraguay.—The appropriation for public health purposes, granted by the last congress of Paraguay, amounts to 600,000 pesos, including the funds for the new services for the control of leprosy, hookworm, plague, tetanus neonatorum, etc.

Bubonic Plague in Mexico.—It is reported that all traffic by rail or steamship to Vera Cruz, with the exception of that over the railway to Jalapa, has been ordered suspended on account of the presence of bubonic plague in Vera Cruz. Major A. R. Goodman, M. C., U. S. Army, attached to the American embassy at Mexico, announced, June 5, that the situation is not so serious as the reports state and that the Mexican medical authorities are handling the situation efficiently and taking every precaution to prevent the plague from spreading to other parts of the country. According to the latest reports from Vera Cruz the number of cases of bubonic plague so far discovered in that city is twelve, several persons having already died. No new cases have occurred lately. The authorities have accepted the offer of the United States government to send a sanitary detachment to assist in combating the disease. It is reported that the outbreak is now under control.

FOREIGN

Donations from Norway to Vienna Physicians.—Dr. R. Nadwig arrived recently in Vienna convoying six freight cars loaded with edibles of a value estimated at 5,000,000 crowns, for Vienna physicians and their families, donated by the physicians of Norway.

Nurses Get Florence Nightingale Medals.—Fifteen nurses representing fifteen countries have been awarded the Florence Nightingale medal for heroism on the battlefield by the Geneva Red Cross. Among those who received the decoration were six American, eight British and eight French nurses.

Personal.—Prof. Sadao Yoshida of Osaka Medical College, Japan, who has been spending his sabbatical year in research work at the parasitologic laboratory of the University of Illinois, has been awarded the Katsurada prize and medal of honor established by the Japanese government to be given periodically to some distinguished workers on tropical diseases.

Portrait of Sir Clifford Allbutt.—The catalogue of the exhibition of the Royal Academy this year includes a portrait of Sir Clifford Allbutt, painted by Sir William Orpen and presented to Sir Clifford by the medical profession. The picture bears the inscription: "Sir Clifford Allbutt, K.C.B., M.D., F.R.S., regius professor of physics in the University of Cambridge, President of the British Medical Association, presented to him by his Profession in 1920."

Typhus in Poland.—Dr. Rupert Blue, formerly Surgeon-General, U. S. Public Health Service, who is in Europe investigating health conditions, has cabled Washington, D. C., for five additional surgeons to be sent to northern ports to inspect all third class passengers for America in view of the prevalence of typhus fever and cholera in Poland. It is required that all third class passengers be bathed and disinfected and held for twelve days at the port of embarkation.

Belgian Society of Psychiatry.—The Société de médecine mentale de Belgique will hold a jubilee congress in celebration of its fiftieth anniversary in Ghent, September 25-26. Dr. Ley, professor of psychiatry at the University of Brussels, is president of the congress, and Dr. Hovrey, Lierneux, Belgium, is secretary. Representative delegates from related societies of the United States will be accorded a warm welcome.

Abolishing Penalties for Abortion.—The small canton of Basel-Stadt, the most northern point in Switzerland, has been debating for some time the question of striking induced abortion from the list of criminal acts. The council finally voted in favor of this against the protests of the medical profession, but was soon obliged to rescind its action, the agitation against the measure compelling the rejection of the bill at a second reading.

Tuberculosis Conference of the Northland.—The Nordiska Föreningen mot tuberkulos is to meet at Stockholm the last week in June. One session is to be devoted to convalescents' colonies and occupation, and treatment of laryngeal tuberculosis. Tuberculosis specialists from Denmark, Finland, Iceland, Norway and Sweden are expected. The conference has been called by the Svenska Nationalföreningen mot tuberkulos, whose address is Birger Jarlsgatan 22, Stockholm.

Tenth Scandinavian Congress of Internal Medicine.—The occurrence and treatment of visceral syphilis has been appointed as the main topic for discussion at this gathering of Scandinavian internists at Helsingfors in July, 1921. The address on syphilis of the central nervous system is to be by Dr. Hanssen of Bergen, the discussion to be opened by Professor Hagelstam of Helsingfors. Syphilis of the abdominal and chest organs is to be presented by Professor Jacobaeus of Stockholm, and the discussion to be opened by Professor Tallqvist of Helsingfors.

Rate of Exchange with Germany.—Some of our German exchanges publish week by week the current rate of exchange to be adopted by the physicians at watering places in charging foreigners for their services. The rate given by the *Medizinische Klinik* for May 9, just received, is as follows: "141 marks for Americans; 130 marks for Argentinians; 51 marks for Belgians; 96 marks for Danes or Norwegians; 119 marks for the English; 46 marks for the French; 129 marks for Netherlanders; 32 marks for Finlanders; 34 marks for Italians; 117 marks for patients from Sweden; 134 marks for patients from Switzerland and 126 marks for those from Spain."

Epidemics of Smallpox.—Glasgow has experienced a considerable epidemic of smallpox, and there is a fear that it will spread to other parts of Scotland. The situation was particularly alarming because of the fact that approximately 40 per cent. of the children under 14 years are unvaccinated. Of fifteen unvaccinated children who contracted the disease, five succumbed; and of the first seven deaths reported from the disease, only one was of an unvaccinated person. Two sources of origin have been traced: a ship from India and a ship from Egypt. An epidemic was prevailing in Calcutta early in the year, 396 deaths from smallpox being recorded in the two weeks ending January 31.

Appeal for Lebanon Hospital.—The Lebanon Hospital for Mental Diseases, Asfuriyeh, Syria, through its American committee, has issued an appeal for subscriptions to a fund of $60,000 for necessary equipment and reconstruction. This hospital, the only asylum for the insane between Constantinople and Cairo, is maintained by voluntary contributions from American, British, Dutch and Swiss benefactors and is administered by an executive committee of members of the staff of the Protestant Syrian College at Beyrout. Accommodations are provided for 150 patients, and admission is granted to any needy mental patient, irrespective of creed, race or nationality. Communications should be addressed to Mr. Robert B. Haines, Jr., secretary, 119 South Fourth Street, Philadelphia.

Tokens of the Gratitude of France.—The *Presse médicale* of May 19 gives a list of persons to whom the French government has recently awarded the Médaille de la Reconnaissance Française. Among them are ten American physicians and surgeons who are cited for having volunteered to care for the sick and wounded and lavished their services with the greatest skill and devotion. The list includes Drs. P. Keating, Wawa, Pa.; C. Mack, Boston; H. Feiss, neurologist; Major E. Johnstone, Honolulu; John Miller; C. Powers, Denver; P. Petree, Germanton, N. C.; Hunter Scarlett, Philadelphia, and T. Beebe, Boston and Miss Ida Shields, Arlington, N. J., whose medical services to the refugees were highly appreciated. The list includes further Dr. Louis MacNulty of Lima, Peru, "who served as assistant and often acting chief of Hospital 38, with zeal and skill."

Deaths in Other Countries

Dr. **J. B. Miranda,** for thirty-four years professor of pharmacy at the University of Santiago, Chile, author of works on the treatment of cholera, etc.——Dr. **R. Livi,** professor of anthropology at the University of Rome, the chief authority on anthropologic statistics in Italy, and inspector general of the army medical service in the Florence district during the war, aged 64.——Dr. **G. B. Locatelli** of Brescia, Italy, prominent in the fight against pellagra, alcoholism and venereal disease. Not long before his death he had presented the Associazione dei Dermosifilografi Italiani with 20,000 lire to found the Locatelli prize for work in this line.——Dr. **F. Schrakamp,** professor of social hygiene and medical legislation at the Akademie für praktische Medizin at Düsseldorf, aged 60.

Government Services

Work on Medical and Surgical History of the War

The initial steps for the preparation of the medical and surgical history of the World War will at once be taken by Surgeon-General of the Army, M. W. Ireland. As finally passed by Congress, the first appropriation for this work was reduced to $50,000, but provision is made that the total cost of this history will not exceed $150,000. As it will require at least two years to complete this work it is the understanding that Congress will provide additional money to carry on this important undertaking from time to time.

Examination for Medical Officers

In accordance with the provision of the recent Act of Congress on reorganization of the Army, including the Medical Department, an examination will be held July 7 for those who served as officers in the Medical Department during the World War. The age limit will be 58 years. All grades are open to appointment of those qualifying physically, morally and professionally after examination. Those who have already applied will be authorized by the War Department to appear before the nearest examining board. Applications from others must be received not later than June 23. Information is available at every military station and recruiting station, or it may be obtained by writing directly to the Surgeon-General's Office.

Hospitals for Public Health Service

The policy of the government for the construction of hospitals and care of former service men is outlined in the bill reported to the House of Representatives by Congressman Langley of Kentucky, chairman of the Committee on Public Buildings and Grounds. The bill provides for the construction of five hospitals, of which three shall be for the treatment of neuropsychiatric patients. One of these hospitals will be located in the central Atlantic Coast states, one in the region of the Great Lakes, and one in the north Pacific Coast states. Two shall be for the treatment of tuberculosis patients, one of which shall be located in the Rocky Mountain States and one in southern California. This bill has been prepared by the Committee on Public Buildings and Grounds after consultation with the Surgeon-General of Public Health Service, director of War Risk Insurance and other officials and is expected to meet all hospital requirements of the immediate future in behalf of soldiers of the World War. The bill authorizes the expenditure of $10,000,000 for the construction of these various hospitals. It permits the remodeling or extension of existing plants and equipment owned by the government.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list L. signifies lieutenant; C., captain; M., major; L. C., lieutenant colonel, and Col., colonel.

ALABAMA
Troy—Rhodes, G. A. (C.)

ARKANSAS
Arkadelphia — Townsend, C. K. (L.)

CALIFORNIA
Los Angeles—Carling, J. (C.)
Fahy, J. E. (C.)
Magee, C. L. (M.)
Turner, K. B. (M.)
San Francisco — Degnan, J. P. (L.)
Tranter, C. L. (C.)
San Rafael—Stone, W. J. (C.)
Walnut Grove—Wilson, E. E. (C.)

COLORADO
Colorado Springs—Sharp, G. L. (L.)

CONNECTICUT
Ansonia—Conklin, C. S. (L.)

DELAWARE
Dover—McKelway, G. I. (M.)

FLORIDA
St. Petersburg — Axline, M. H. (M.)

GEORGIA
Augusta—Butler, J. H. (M.)
Lang, N. H. (C.)

ILLINOIS
Aledo—Baldwin, A. K. (L.)
Chicago—Dale, G. L. (M.)
O'Grady, G. E. (L.)
Jacksonville—Stacy, G. H. (C.)
Mount Vernon—Suttle, O. A. (M.)

INDIANA
Columbia City—Pence, B. F. (C.)
Indianapolis — Glendening, J. L. (L.)
Jones, C. H. (C.)

IOWA
Council Bluffs—Konigmacher, A. H. (C.)
Sumner—Wuttke, E. E. (L.)

KANSAS
Mayfield—Clark, E. F. (L.)

KENTUCKY
Calhoun—Moore, P. D. (L.)
Hopkinsville — Durham, W. W. (C.)
Louisville—Hill, D. L. (C.)

LOUISIANA
New Orleans—Starns, C. E. (L.)

MARYLAND
Baltimore—Murray, J. G., Jr. (C.)

MASSACHUSETTS
Boston—Parker, C. C. (L.)
Schnack, A. G. C. (L.)
Brockton—Dunham, H. B. (L.)
Framingham — Partington, C. B. (L.)

MICHIGAN
Detroit—Anderson, F. C. (L.)
Grand Rapids—Dingman, H. W. (C.)

MINNESOTA
Albert Lea—McCreight, G. M. (L.)
Minneapolis—Stone, H. W. (L.)

MISSISSIPPI
Natchez—Podesta, A. J. (C.)

MISSOURI
Mineola—Wyatt, D. (C.)
St. Louis—Lee, E. J., Jr. (C.)

NEVADA
Carson City—Circe, W. J. (M.)

NEW HAMPSHIRE
Rumney—Drew, J. A. (M.)

NEW JERSEY
Bridgeton — Charlesworth, I. E. (M.)
Colonia—Tomassene, R. A. (C.)
Jersey City—Frundt, O. C. (C.)
Raritan—Nixon, W. L. (L.)

NEW YORK
Brooklyn — McCullough, W. A. (L.)
Stone, A. (L.)
Elmhurst—Baker, A. T. (M.)
New York—Mayer, J. M. (L.)
Sanford, W. H. (M.)
Sharp, H. (C.)
Vetter, P. J., Jr. (L.)
Syracuse—Brennan, A. W. (C.)

NORTH CAROLINA
Asheville—Costello, M. J. (C.)
Newton—McCorkle, M. L. (L.)

NORTH DAKOTA
Munich—Lindner, E. R. (M.)

OHIO
Cleveland—Steel, J. M. (M.)
Hudson—Herrick, H. J. (C.)
Marble Cliff—Miller, S. H. (L.)
Springfield—Mahoney, T. W. (L.)
Zanesville—Allen, S. L. (L.)

PENNSYLVANIA
Philadelphia—Mayer, J. P. (L.)
Wayne—Truxal, C. W., Jr. (C.)

TENNESSEE
Cordova—Hooper, E. L. (C.)
Knoxville—Allan, H. W. (L.)
Nashville—Brewer, F. B. (C.)

TEXAS
Fort Worth—Pember, C. H. (C.)
Kilgore—Hamilton, E. H. (C.)
San Antonio—Nesbit, W. E. (L.)
Tracy—Lyon, W. H. (C.)
Wortham—Seely, M. S. (C.)

VIRGINIA
Ammon—Hamner, J. L. (L.)
Jetersville—Styers, R. J. (C.)
Richmond—Mercer, W. N. (C.)

WASHINGTON
Seattle—Birchfield, G. I. (C.)
Spokane—Ridpath, P. C. (L.)

WEST VIRGINIA
Beverly—Barlow, C. A. (M.)
Carbon—Ashby, J. W. (C.)

Foreign Letters

BUENOS AIRES

(From Our Regular Correspondent)

April 27, 1920.

Food Adulteration

The whole city has been much exercised over the results of an investigation being carried out by the municipal authorities in regard to adulterated or spoiled foodstuffs now being sold in the open market. It was ascertained through factory inspections that a number of biscuit and breadstuff firms and confectioneries were using spoiled eggs in their products. There were seized from storage large quantities of decomposed preserves, cheese, etc., it being found that they were sold after being treated so as to make them tolerable. In other well known factories there were kept spoiled meats and fish, which it was intended to treat in the same way. The popular indignation at these facts reached its height when four persons died as a result of eating some spoiled food, and an attempt was made to break into the house where the food had been prepared. The investigation is being continued.

Murder of a Student in the School of Medicine of La Plata

The signs of academic disintegration, since the students have obtained virtually the right of appointing the governing boards, found serious expression recently at La Plata. For several reasons which have changed every once in a while, the students of the University of La Plata have been on a strike for some time. A large number, however, being in disagreement with this move, requested to be allowed to

take the examinations. On examination day the examining board was assaulted by the strikers, some shots were fired, and a first-year student, David Viera, aged 20, who was taking the examination, was killed. The dean of the school of medicine, Professor Belou, has resigned his position, and it looks as if the school would be closed.

School of Medicine of Rosario

The government has just opened a school of medicine at Rosario, having placed in charge Dr. Agudo Avila. In view of the importance of that city, it seems assured that the school will become very important. It will be located next to the Hospital Centenario, the funds for the building having been provided by public subscription.

Antimalaria Campaign

The summer campaign against malaria carried out by the national department of public health in Catamarca, Tucumán, Salta and Jujuy is coming to an end. During the campaign 192 kg. of quinin has been distributed, 1,500 kg. of oil was employed, and 1,400 mosquito nets were given away to poor people. The result in some places seems to have been good.

Anthrax Cases

There has been a decided increase in the number of cases of anthrax among workmen, which may be considered as industrial accidents. In 1910, fifteen cases were observed, while in 1918, there were 226 and last year, 113 cases and 18 deaths. The department of labor has recommended to the government that measures be taken to protect the workers liable to contract this disease.

LONDON

(From Our Regular Correspondent)

May 15, 1920.

The Electric Sterilization of Milk

The Medical Research Committee has published a report on this subject by Professor Beattie of Liverpool and Mr. Lewis, lecturer on bacteriology of Liverpool. An independent trial of the matter was also made at Birmingham by Professor Leith. The experimenters agree in supporting the value of the proposed electrical method of sterilization. The Birmingham workers found that the electrical method showed a close parallelism to the old method of sterilization by heat, and are inclined to think that the current kills the bacteria by virtue of the heat which it generates. They were led to believe that in the electrical method the current raises the temperature of the milk more quickly; and since it passes through every part of the milk, the heat which it generates reaches every part of the milk at the same moment—an advantage over the simpler thermal method. The sterilizing power of the two methods is similar, though the electrical is quicker in action. Leith summarized his report by saying that "both the thermal and electrical methods have a high practical value and deserve consideration in any endeavor made to improve milk supplies. The thermal is simpler and cheaper, the electrical quicker in action." Leith suggested further that both methods could be made more efficient by grafting on them the practice of pasteurizing by two treatment applications, with rapid cooling of the milk after each, and that even with a single application the milk would store better if rapidly cooled after treatment. In the opinion of the Medical Research Committee, the experiments at Birmingham, though they entirely support the practical results obtained by Beattie and Lewis at Liverpool, were not complete enough on their bacteriologic side to settle finally the question whether the electrical current in this method has a direct bactericidal action or whether it acts purely as a thermal agent. Sir Oliver Lodge, who superintended the electrical arrangements, was strongly of opinion that its action was purely thermal.

Pellagra in Egypt During the War

The controversy that exists as to the etiology of pellagra renders important the report of a committee appointed to examine the situation created in 1918 by the presence in Egypt of a large number of prisoners of war suffering from pellagra. It was found to be a deficiency disease due to insufficient assimilation of protein, and characterized by erythema and pigmentation of the exposed parts of the body, on the back of the hands first, a fortnight later the nose, later on the feet, these discolored patches being dry and not sweating even under pilocarpin. Profound disturbance of nutrition with early wasting of the muscles of the shoulder girdle, and progressively increasing fall in blood pressure follow. Loss of appetite is a very early symptom, and there is defective secretion of hydrochloric acid in the gastric juice. Herewith there is impairment of digestion, both gastric and pancreatic, malassimilation of protein and fat, and an increased bacterial growth in the intestine, with intermittent diarrhea leading to further loss of food ingested, but incompletely absorbed. Also the enhanced destruction of protein gives very foul-smelling stools and indican appears in the urine in increasing quantities; apathy comes on, perhaps melancholia, and the patient dies. The disease picture suggests suprarenal inadequacy, and, in fact, in the recorded cases the suprarenals averaged 15 gm. lighter in the pellagra cases than in the controls. There is no evidence of specific bacterial or protozoal infection. Death is due to some intercurrent infection —pneumonia, dysentery, tuberculosis or malaria accounted for 91 per cent. of deaths. The disease occurred in Turkish camps, not in the camps of Germans alongside, where there was money to buy extra food. Spot maps showed that there was no infection from place or person.

The important question was how this disease was to be prevented. Eighty-eight per cent. of the cases arose among newly captured Turkish prisoners, who before capture for months had available only two thirds of their normal ration, and had suffered "from long continued undernutrition," as their German general had reported the year before. Further, the protein of their diet came mostly from wheat, barley or maize, very little from meat. Now Hopkins and Willcocks, in 1907, showed that the chief protein of maize cannot keep rats alive, as it does not contain enough tryptophan, an amino-acid of the aromatic series; in 1913, Sandwith suggested that want of tryptophan might help to cause pellagra. The committee had the help of Prof. W. H. Wilson, of the Cairo School of Medicine, who has long been working at the different nutritional values of the proteins, which seem in part to depend on their individual amino-acids. For the making of epinephrin a benzene nucleus is essential. For the production of this the human organism depends on the hydrolysis of special proteins in the food supply, and even then the yield of tryptophan in this process may be broken up by an overwhelming bacterial flora in the duodenum. Every diet scale considers how much protein is necessary for the man of 70 kg., which is agreed to be 40 gm. daily. But that means grams absorbed, and for normal persons must be increased by one tenth; but experiment proved that for Turkish prisoners it required to be increased by one half, so that, even if they had received full rations, the Turks would have been underfed. But, further, they were fed on the wrong proteins. Wilson had calculated the "biologic value of the proteins" (B. V. P.) of various foodstuffs, and had found that, to replace 30 gm. of meat as protein supply in a man's diet, 34 gm. of rice-protein were necessary, 50 of beans, 76 of bread, and 102 of maize. Maize-eating people, therefore,

suffer from pellagra because it has the lowest biologic value of the proteins of all the cereals, and if damaged or decayed it is all the less nutritious and pellagra arises more quickly. Vegetable proteins are not so easily assimilated as those in meat, and, further, the beans for the prisoners were not at first well cooked. These difficulties were all adjusted, but it was found that men might escape pellagra on a particular diet while resting, but succumbed as soon as they worked hard; so the diet for heavy labor, though showing already sufficient calory value and vitamin content, had to be increased; then the pellagra ceased.

A Medical Centenarian

Dr. J. S. S. Logie of Kirkwall has celebrated his one hundredth birthday. He is the doyen of the British medical profession, having taken his degree at Edinburgh in 1842. He is also the oldest elder of the Church of Scotland.

PARIS

(From Our Regular Correspondent)

May 13, 1920

Supplement to the Pharmacopeia

Since the publication of the 1908 edition of the French Pharmacopeia, a number of remedies have come into current use in therapeutics, and it therefore became necessary to inscribe these in the pharmacopeia. Nevertheless, in the supplement which has recently appeared, one searches in vain for mention of colloidal silver, emetin, bismuth carbonate and other substances. The omission is explained by the following fact: The committee of revision, nominated April 10, 1910, was on the point of issuing the supplement in its present form in August, 1914, when the war interrupted the work. Reorganized in November, 1918, the committee desired that no further delay occur in the printing, and it confined its work simply to such corrections as did not entail considerable changes.

The supplement is in two parts: The first (Addenda) contains the new articles to be inserted in the body of the Pharmacopeia; the second (Mutanda) comprises additions, corrections, modifications and deletions applying to a certain number of articles. Among the new substances are noticed veronal, stovain, novocain and antidysenteric and antimeningococcic serums. As for the modifications, these relate mainly to standards of purity required of certain substances. The committee has decided, in effect, that traces of impurities which are nearly inevitable in the industrial preparation of certain products are permissible whenever these do not result in attenuation, however slight, of the therapeutic activity of the drug. It is interesting to note a change in the maximum dose of sulphonal and trional, which has been fixed at 1 gm., instead of 2 gm.

Death of Glénard

Dr. Frantz Glénard, national correspondent of the Académie de Médecine since 1896, died recently at the age of 72. We owe to him much of our knowledge of visceroptosis (often called Glénard's disease) and the introduction and adoption in France of the treatment of typhoid fever by cold baths.

Franco-American Scientific Cooperation

Mention was made in a preceding letter (THE JOURNAL, Jan. 31, 1920, p. 338) of the cooperative spirit manifest in the scientific relations of France and the United States. Along the same line, it is interesting to note the reciprocal advancement of the scientific works and ideas of the two countries. Thus, Dr. J. Darier recently presented before the Académie de Médecine a translation of his *Précis de dermatologie* by Prof. Sigmund Pollitzer, New York, in the preface of which the translator pays homage to the French school of dermatology and in particular to the Hôpital Saint-Louis. On the other hand, Dr. A. C. Guillaume has just published a monograph on the great sympathetic system with special reference to its biologic reactions (Le sympathique et les systèmes associés). The author has made extensive use of the facts revealed by the works of British and American investigators (Gaskell, Higier, Head, Sir Edward A. Schafer, Pottenger, Barker and others). I think it should also be remarked that the publication of the *Archives of Neurology and Psychiatry* was announced in the last number of the *Revue neurologique* in flattering terms.

American Gift to Bacteriologic Institute

An American philanthropist, M. Douglas Flattery, has recently donated to the Institut bactériologique de Lyon the sum of 100,000 francs, the interest of which shall serve as an annual grant to a student of the University of Lyons for the pursuit of laboratory studies of infectious diseases.

Foreign Students—For or Against

At the ninth Congrès des étudiants, which recently met at Bordeaux, the following resolution was adopted: That free enrolment be granted to necessitous students by increasing the charges to foreign students. This was undoubtedly fostered by the fear of competition with foreigners who might settle in France after completing their studies. Not the least regrettable feature is the fact that the students should be capable of thinking of such a restrictive measure at the risk of prejudicing French influence abroad. An exactly contrary view seems to be maintained in official circles; in fact, a recent decree sets forth the credits which will be accepted to exempt foreign students from the school requirements. Students who might seek such exemption will simply have to prove that they have an adequate knowledge of the French language.

Printing of Graduation Dissertations

Two deputies, M. de Menthon and M. Ducos, have called the attention of the minister of public instruction to the great expense entailed by the compulsory printing of university dissertations. They inquired whether twelve typewritten copies would not serve the same purpose as the obligatory printing of 110 copies. The minister replied that printing the dissertation should be continued if for no other purpose than to serve as exchange with the principal foreign universities. This exchange should hardly be abolished, as it is one of the best methods of scientific propaganda.

Marriages

ARTHUR JUSTIN G. HENDERSON, Kiester, Minn., to Miss Hazel Olson of Estherville, Iowa, May 18.

JOHN FRANCIS BENNETT, Burlington, Wis., to Miss Florence Elizabeth Mauer of Milwaukee, May 31.

LLOYD JAMES BLAKEMAN, Chicago, to Miss Louise M. Pabst of Blue Island, Ill., recently.

RALPH WENDELL MITCHELL to Mrs. Margaret MacKenzie, both of New York City, June 2.

EUGENE ALEXANDER MOULTON to Miss Margery Lagerquist, both of Chicago, recently.

CLINTON B. ELLIS, Kansas City, Mo., to Miss Lillian St. Clair of Chicago, May 1.

LENA AUGUSTA GERALDSON to Mr. Frederick H. Miller, both of Napa, Calif., May 24.

MORRIS L. WEINSTEIN to Miss Marion H. Liebshutz, both of Chicago, June 1.

IDA RUTH GOROV, Chicago, to William W. Policoff of Philadelphia, May 30.

HARRY LEON STEELE to Miss Mary Stuart Osgood, both of Detroit, June 2.

Deaths

William Pollock Crumbacker, Independence, Iowa; Medical College of Ohio, Cincinnati, 1882; aged 62; a member of the Iowa State Medical Society; superintendent of the Independence State Hospital since 1902; assistant physician of the Athens (Ohio) State Hospital from 1884 to 1889; and superintendent of the institution from 1890 to 1892; superintendent of the West Virginia Hospital for the Insane, Weston, from 1893 to 1897; a member of the American Medico-Psychological Association; and contributor of numerous articles to the literature of hospital management and neuropathology; died, May 14, from pneumonia.

William St. George Elliott, Pasadena, Calif.; University of the City of New York, 1863; aged 81; a graduate in dentistry from the Philadelphia Dental College in 1870; formerly professor of operative dentistry in the National Dental College, London, England; acting assistant surgeon, U. S. Army, and assistant surgeon of Volunteers during the Civil War; dental surgeon to St. Mary's Hospital, New York City; died, May 23.

George Lafayette Loope, Seattle; College of Physicians and Surgeons, Chicago, 1886; aged 73; formerly surgeon to the Gogebic Hospital and to the Wisconsin Central and Northwestern systems at Bessemer, Mich.; a veteran of the Civil War, and during the World War on duty with the U. S. Shipping Board; at one time a member of the Michigan State Board of Health; died, May 11.

Francis Xavier Straessley, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1894; aged 60; also a graduate pharmacist; a member of the Medical Society of the State of Pennsylvania; a member of the common council of Allegheny and later of Pittsburgh, and a member of the staff of St. John's Hospital, Pittsburgh; died in St. Francis Hospital, Pittsburgh, May 24.

Clarence Miles Godding ✠ Providence, R. I.; Harvard University Medical School, 1883; aged 62; surgeon to the outpatient department of the Rhode Island Hospital; visiting physician and surgeon at the Providence Lying-In Hospital, and attending physician to the Dexter Asylum; died at the home of his daughter in Providence, May 28.

James Buckley Tweedle ✠ Weatherly, Pa.; College of Physicians and Surgeons in the City of New York, 1865; aged 83; health officer of Carbon County; local surgeon of the Lehigh Valley Railroad; once secretary of Carbon County Medical Society; surgeon of U. S. Volunteers during the Civil War; died at his home, May 21.

Otto Edward Forster, St. Louis; St. Louis Medical College, 1881; aged 61; a member of the Missouri State Medical Association; once president of the St. Louis Board of Health, and police commissioner; a specialist in diseases of the ear, nose and throat; died in Barnes Hospital, St. Louis, May 17, from heart disease.

Edward Cranch ✠ Erie, Pa.; Georgetown University, Washington, D. C., 1873; New York Homeopathic Medical College, New York City, 1875; aged 68; president of the Erie County Medical Society in 1919; consulting physician to Hamot Hospital, Erie; died, May 20, from aneurism of the aorta.

Ernest Eldred Wells, Stillwater, Minn.; Chicago Medical College, 1898; aged 49; a member of the Minnesota State Medical Association; formerly coroner of Washington County, and for the last year county physician; once an alderman of Stillwater; died, May 17, from pneumonia.

Amos F. Green, West Jefferson, Ohio; Starling Medical College, Columbus, Ohio, 1894; aged 60; a member of the Ohio State Medical Association; formerly mayor of West Jefferson, and coroner of Madison County; died, May 21, from acute nephritis.

Louis Henry Mayer ✠ Johnstown, Pa.; Jefferson Medical College, 1887; aged 58; a member of the staff of the Conemaugh Valley Memorial Hospital; president of the Cambria County Medical Society in 1896; died, May 22, from heart disease.

George E. Pettey ✠ Memphis, Tenn.; Memphis (Tenn.) Hospital Medical College, 1888; aged 63; a specialist in internal medicine; while crossing a street in Memphis, May 20, was struck by a street car and died while being taken to the hospital.

✠ Indicates "Fellow" of the American Medical Association.

William C. Bundy, Modesto, Calif.; College of Physicians and Surgeons, Chicago, 1885; aged 74; for many years a practitioner of Aurelia, Iowa; died at the home of his daughter in Primghar, Iowa, May 12, from cerebral hemorrhage.

William C. Bell, Detroit; Detroit Homeopathic College, 1911; aged 33; a member of the Michigan State Medical Society; assistant surgeon to the police department of Detroit since 1917; died, May 19, from pneumonia.

Hanford Charles Keith, Losantville, Ind.; University of the City of New York, 1882; aged 62; a member of the Council of Physicians and Surgeons of New Brunswick in 1882; died recently from heart disease.

Frank Rufus Searles, New York City; Long Island College Hospital, Brooklyn, 1892; Columbia University College of Physicians and Surgeons, New York City, 1899; aged 72; died, May 5.

George LeRoy Menzie, Oneida, N. Y.; College of Physicians and Surgeons in the City of New York, 1866; aged 77; surgeon of U. S. Volunteers during the Civil War, died, May 12.

John Miller, Netcong, N. J.; University of the City of New York, 1886; aged 57; a member of the Medical Society of New Jersey; died, May 7, from myocarditis.

Edgar Albert Tobey ✠ Youngstown, Ohio; Western Pennsylvania Medical School, Pittsburgh, 1904; aged 45; died in Los Angeles, March 25, from uremia.

Robert Graves ✠ Chicago; Northwestern University Medical School, 1893; aged 50; died in Wesley Hospital, Chicago, April 5, from pneumonia.

George Milton Warren, Warren, Ont.; Victoria University, Coburg, Ont., 1870; aged 72; died at the home of his brother in Toronto, April 8.

Lon S. Keith, Benzien, Mont.; Eclectic Medical Institute, Cincinnati, 1887; aged 62; died, April 29, from pneumonia following influenza.

George M. Hoehn, Mount Airy, Cincinnati; Medical College of Ohio, Cincinnati, 1885; aged 67; died, April 21, from arthritis deformans.

Cotesworth Pinckney Smith ✠ Arkansas City, Ark.; University of Louisville, Ky., 1873; aged 76; died, February 2, from heart disease.

Charles W. Barker, Baltimore; University of Maryland, Baltimore, 1885; died at the home of his daughter in Baltimore, May 9.

Francis Joseph Todd, Oakland, Calif.; University of Michigan, Ann Arbor, 1883; aged 59; died, April 27, from cerebral hemorrhage.

Edward M. Goodwin, Toledo, Ohio; Albany (N. Y.) Medical College, 1863; aged 77; died, March 18, from heart disease.

John B. Wilson, Scott, Ohio; Fort Wayne (Ind.) College of Medicine, 1889; aged 61; died, May 7, from valvular heart disease.

Cary Hamilton Wilkinson, Galveston, Texas; Jefferson Medical College, 1869; aged 75; died, February 3, from uremia.

William M. Kerr, Savannah, Mo.; Miami Medical College, Cincinnati, 1868; aged 80; a veteran of the Civil War; died, May 4.

Archimedes Rose, Vernal, Utah; Jefferson Medical College, 1879; aged 64; died, April 12, from valvular heart disease.

Hampton Pinckney Whatley, Mineral Wells, Texas; Barnes Medical College, St. Louis, 1904; aged 48; died, April 22.

David C. Fouts, Conrad, Mont. (license, Indiana 1900); aged 75; formerly of New Salisbury, Ind.; died, April 12.

Carl Elias Roser, Lansing, Mich.; University of Michigan, Ann Arbor, 1920; died, April 27, from pneumonia.

Henry Taylor Jones, Almyra, Ark.; Long Island College Hospital, Brooklyn, 1878; aged 71; died, May 2.

Harvey Bacharach, San Diego, Calif.; Illinois Medical College, Chicago, 1899; aged 54; died, May 3.

Malcolm G. Violet, Waterford, Wis.; Hahnemann Medical College, Chicago, 1886; died, February 27.

William G. Hepworth, Steveston, B. C.; McGill University, Montreal, 1894; aged 52; died recently.

George H. Scott, Long Beach, Calif.; Jefferson Medical College, 1857; aged 90; died, May 9.

Shelby Lay, Everton, Ark.; University of Arkansas, Little Rock, 1898; aged 68; died, April 23.

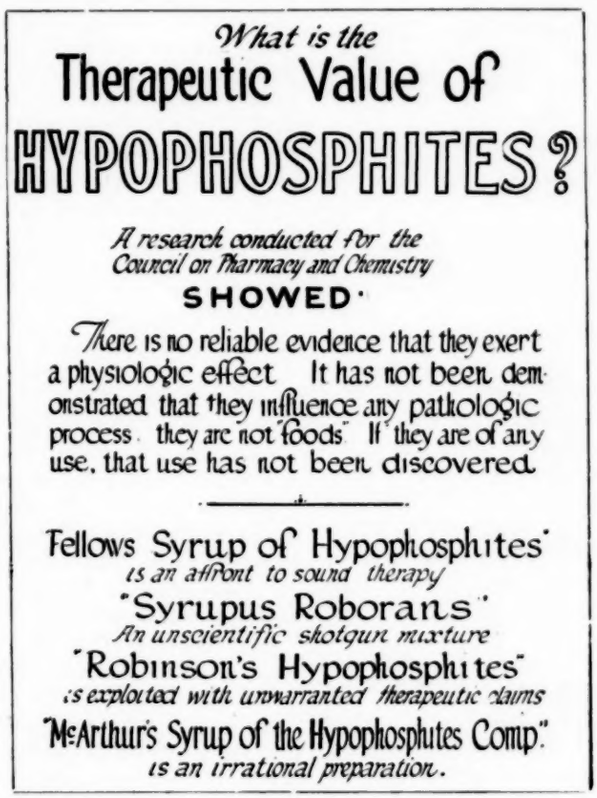
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

Sealeaf Emulsion.—A shipment of this preparation, which the label described as "A Chocolate Cod Liver Oil," was made by the Sealeaf Emulsion Co., New York City, in September, 1917, in violation of the federal Food and Drugs Act. The Bureau of Chemistry analyzed the product and reported that it consisted essentially of cod liver oil with malt extract, chocolate, alcohol, aromatics and water. It was falsely and fraudulently represented as a cure for pulmonary diseases, coughs, colds and general debility; as a blood purifier and as a protection against lung trouble, rheumatism, weak kidneys, and all organic diseases; as a cure for asthma, bronchitis, and catarrhal affections and as a preventive and remedy for diabetes, malaria, gastritis, etc. In December, 1918, the company pleaded guilty and was fined $50.—[*Notice of Judgment No. 6851; issued May 4, 1920.*]

Green Mountain Herb Tea, Sabine's Indian Vegetable Tea and Sabine's Indian Vegetable Cough Balsam.—Herman C. Lemke and Mary Sabine did business in Milwaukee, Wis., under the trade name A. J. Lemke Medicine Co. In September, 1917, this concern shipped quantities of "Green Mountain Herb Tea," "Sabine's Indian Vegetable Tea" and "Sabine's Indian Vegetable Cough Balsam." The Bureau of Chemistry analyzed these preparations and reported that the "Green Mountain Herb Tea" and the "Indian Vegetable Tea" consisted essentially of senna, fennel, elder flowers, anise, triticum, sassafras, American saffron, coriander, licorice root, butternut bark, buckthorn and Epsom salt. The "Indian Vegetable Cough Balsam" was found by the same chemists to consist essentially of alcohol, chloroform, tar, resins, sugar and traces of alkaloids, the whole flavored with aromatics. "Green Mountain Herb Tea" was falsely and fraudulently represented as a cure for indigestion, liver complaint, kidney complaint and diseases to which women and children are subject. It was also alleged to be a blood purifier, to prevent malarial disorders, to make new rich red blood and to strengthen and invigorate. "Indian Vegetable Tea" was falsely and fraudulently represented as a cure for sick and nervous headaches and indigestion, all scaly eruptions of the skin, pimples, scrofula, salt rheum, tetter, and the different diseases of delicate females and young children, as well as being good for some other things. The "Indian Vegetable Cough Balsam" was falsely and fraudulently represented as a cure for incipient consumption, whooping cough, all throat and lung complaints, bronchitis, coughs, colds, hoarseness, etc. In February, 1919, Herman C. Lemke pleaded guilty and was fined $300. A *nolle prosequi* was entered as to Mary Sabine.—[*Notice of Judgment No. 6857; issued May 5, 1920.*]


What is the
Therapeutic Value of
HYPOPHOSPHITES?
A research conducted for the Council on Pharmacy and Chemistry
SHOWED
There is no reliable evidence that they exert a physiologic effect. It has not been demonstrated that they influence any pathologic process. they are not foods. If they are of any use, that use has not been discovered.
Fellows Syrup of Hypophosphites
is an affront to sound therapy
"Syrupus Roborans"
An unscientific shotgun mixture
"Robinson's Hypophosphites"
is exploited with unwarranted therapeutic claims
"McArthur's Syrup of the Hypophosphites Comp."
is an irrational preparation.

This is a greatly reduced reproduction of one of numerous educational posters shown at the New Orleans meeting in the exhibit of the Council on Pharmacy and Chemistry. The hypophosphites were introduced into medicine in '58 by Churchill, who advanced the theory, long since discarded, that the so-called tuberculous diathesis was due to a phosphorus deficiency. It is now known that little phosphorus, if any, is assimilated from hypophosphites—far less than from phosphorus compounds of ordinary food. Due to the power of advertising, many physicians still prescribe hypophosphite combination, although there is neither scientific basis, nor clinical evidence to warrant such prescribing.

Bovinina.—The Bovinine Co., New York City, shipped in July, 1917, to Porto Rico, a quantity of "Bovinina" that was misbranded. The Bureau of Chemistry reported that analyses showed that the product was apparently a meat extract. It was falsely and fraudulently represented as a cure for anemia, nervous prostration, neuralgia, asthma, alcoholism, heart disease, diseases of children, St. Vitus' dance, catarrh of the bladder, menstrual disorders, diabetes, chronic gastritis, consumption and a few other things. It was further declared misbranded because the label did not declare the quantity or proportions of the alcohol it contained. In December, 1918, the Bovinine Co. pleaded guilty and was fined $50.—[*Notice of Judgment No. 6854; issued May 4, 1920.*]

Fruit-a-Tives.—In October, 1918, the United States attorney for the District of Massachusetts, acting on a report of the Secretary of Agriculture, filed a libel of information asking for the seizure and condemnation of 84 dozen packages of Fruit-a-tives that had been shipped by Fruit-a-tives Limited, Ogdensburg, N. Y. The Bureau of Chemistry reported that analysis of a sample showed that it contained essentially extracts of aloes, nux vomica (strychnin) and cinchona bark (quinin). The nostrum was declared misbranded because the label and cartons conveyed the impression that the laxative properties of Fruit-a-tives were due to the presence of fruit or fruit extracts when in fact the laxative properties were due to aloes and nux vomica. Furthermore, the preparation was falsely and fraudulently represented as a remedy, treatment or cure for indigestion, kidney irritation, skin diseases, headaches, backaches, sleeplessness, pelvic pains, nervous depression, catarrh, etc. In November, 1919, the claimant, having filed an answer and a sufficient bond for the release of the product, judgment of condemnation and forfeiture was entered and the product was delivered to the claimant.—[*Notice of Judgment No. 6884; issued May 4, 1920.*]

Anticalculina Ebrey.—This preparation was being sold in July, 1917, in Porto Rico by the Ebrey Chemical Works of Humacao, Porto Rico. The Bureau of Chemistry reported that analysis showed the preparation to consist essentially of alcohol (28.8 per cent. by volume) colchicin, ammonium salts, vegetable extractives and water. The preparation was falsely and fraudulently represented as having the power of dissolving calculi, both renal and biliary, and to be a cure for diseases of the liver, kidneys and bladder, Bright's disease, diabetes, rheumatism, jaundice, dropsy and other conditions. It was further declared misbranded because the

amount of alcohol present was not correctly stated on the label and it was falsely branded as to the country in which it was manufactured, being produced in Porto Rico but labeled as coming from the United States. The Ebrey Chemical Works in March, 1919, entered a plea of *nolo contendere* and was fined $50 and costs.—[*Notice of Judgment No. 6900; issued May 4, 1920.*]

McDowell Ginseng Bitters.—Douglas E. McDowell, who traded as the McDowell Ginseng Garden, Joplin, Mo., shipped in November, 1917, a quantity of "McDowell Ginseng Bitters." Analysis of a sample by the Bureau of Chemistry showed that the product was a slightly acid solution of plant extract containing small quantities of glycerin and a zinc salt. The preparation was falsely and fraudulently represented as an effective cure for all stomach troubles except cancer; for all intestinal disorders, constipation, cholera infantum, acute dysentery, congestion of the liver, all female disorders and also as a general sexual tonic for men and women. In June, 1919, McDowell pleaded guilty and was fined $20 and costs.—[*Notice of Judgment No. 6897; issued May 4, 1920.*]

Correspondence

LUNCHEON GLIMPSES OF SIR WILLIAM OSLER DURING THE WORLD WAR

To the Editor:—It was my good fortune to come in rather close contact with Sir William Osler in 1915 during the World War. He was consultant to one of the hospitals in South Devonshire, England, where I was working, and during his visits to this section, which would sometimes last a week, he would have luncheon with us every day after his ward rounds. These luncheons were a delight, as Dr. Osler's conversation was always sparkling and brilliant and full of humor. It became my custom to jot down in my diary much of what he said. In picking it up the other evening I found his remarks highly entertaining, and it occurred to me that perhaps the readers of THE JOURNAL would find them equally so.

Dr. Osler returned after a month's absence. As he made his visit through the hospitals he generated everywhere a spirit of warm friendship. He shook hands with all the physicians and nurses as he came to them, not overlooking the probationers. To those across the ward he waved a friendly greeting. One of the nurses asked him to let her take his photograph, and he grasped the arms of two of the physicians, saying: "Well, but I must have the boys with me." A few moments afterward the nurse, watching her opportunity, snapped him by himself. When he heard the click of the camera he looked up in surprise and exclaimed, smiling: "Oh! you thief."

As he met the secretary of the hospital, a very quiet and demure English woman, he asked her if she were being treated as well as she deserved. She blushed and replied that she thought she was. Whereupon Sir William added: "Well, if you are not, just let me know and I shall see that your treatment reaches that standard."

I showed him eight patients with gunshot wounds of the chest and he examined them carefully and dictated a note on each and then remarked to me: "Turn them over to Dr. Rest and Father Time, and with the assistance of the nurses and the culinary department they will soon come around."

He became very much interested in an aneurysmal varix of the popliteal which gave a pistol shot sound in both femoral arteries. When we went to lunch he soon had himself surrounded by every book in our library which contained any matter on aneurysms.

All of us were waiting in the drawing room for lunch. Dr. Osler was sitting on the corner of a table clicking his heels together with the buoyancy of a schoolboy, when the lunch bell sounded. But no one moved for a moment, and then Dr. Osler quickly remarked to Lady Osler and Mrs. Herbert Hoover: "Why, these boys get up at 6 o'clock (he must have surmised that we got up at 8 o'clock!) and I know they are hungry. Let's go in to lunch."

With us this day was a professor of sociology of a Western university and his wife, who were spending a year abroad studying social conditions. The Carnegie fund for university professors was mentioned. Dr. Osler said: "It is a splendid thing and in many instances a life saver to the professors' wives. They (the wives) have a most trying profession," he added, "looking after us, for the best of us are a poor lot—simply treading on the fame of our predecessors, throwing dust in the students' eyes, but fortunately some of them find us out." One lady replied, "Why, Dr. Osler, I think you deserve all you receive. I have heard of Dr. Osler's book on medicine for so many years that I expected to meet an old man." Dr. Osler laughed and said: "Oh, that was my father. He was a fine old man!"

Dr. Osler then continued: "That reminds me of a time when two other doctors and I were sent on a committee down on the eastern shore of Maryland to investigate a matter. When we reached the small town where we were going, I was introduced to the doctor of the community, a splendid type of the old school, and as he gave my hand a cordial shake, he asked hesitatingly showing surprise that I did not have silver locks: 'Well, are you the Dr. Osler of Baltimore who has written that great book on medicine?' As quick as a flash I replied, 'Oh my, no, that was my father! 'Well, I thought so,' he added; 'Now, you give the old man my regards and tell him that I certainly like the way he presented the subject of infectious diseases, especially pneumonia and malaria.' 'I shall surely do that,' I said, 'and I know father will be very gratified.' As we remained here several days we thought we would have to tell the old doctor the truth, but we didn't.

"One day on this same trip, we had just finished lunch and were in the office of the hotel, when some one rushed in and asked very excitedly if Dr. Osler were there and if he would come down to the shore, for a lady had fallen off the pier and she might be drowning. I immediately said that I did not know much about resuscitating drowned people, that was out of my line, but that one of the doctors with me was the Hopkins specialist in this branch. This doctor was hurried to the scene and the fat woman who had ventured out too far on the pier and had slipped into the water was soon quite restored. The Baltimore papers gave an account of the incident the next morning, declaring that the woman's life was saved because of the prompt action of this doctor, a specialist in resuscitating drowning people, who happened to be near the scene. The fat woman has never forgotten the doctor's heroic deed and always sends him on her birthday a grateful letter accompanied by a personal photograph. By this time he surely has a sufficiently large collection to start a photographic gallery."

During the meal something was mentioned about the English not eating hot bread, and Dr. Osler replied: "That is the reason most doctors in England are poor. Why, I used to make my living in Baltimore," he continued, "from the people who eat hot bread, just as the doctors in Boston make their living from people who eat pie. One time I had my secretary, a very intelligent woman and a hot-bread eater, of course, compile the histories of the patients who had come to my office for one year, and you would be surprised at the large percentage in whom hot bread was the cause of their trouble."

Then, just to make a deeper impression on his hearers and with a twinkle in his eye, he said, "I believe it came to 68.5 per cent."

The professor of sociology, a very able but decidedly underdeveloped and undernourished man, said he had been to see five specialists on account of stomach trouble. (I afterward learned that all five of the specialists had told him that his trouble was neurasthenia.) When the professor left, Dr. Osler remarked: "That man is a very smart fellow; but it was too bad that he couldn't have chosen his parents, for he has too much brain for his body."

Coming out from lunch we sat around smoking, and some one mentioned what the Rockefeller relief fund for the Belgians had accomplished. Dr. Osler remarked that it was rather peculiar how Mr. Rockefeller first became interested in Johns Hopkins. He said: "At dinner one evening in Baltimore, Mr. Gilman, president of Johns Hopkins, and Mr. Gates, Mr. Rockefeller's right hand man, were sitting side by side, and Mr. Gates remarked that not long ago he picked up, by chance, a book on medicine by a man named Osler, and, looking through it, he became so interested in it that he purchased a copy and enjoyed intensely reading the section on infectious diseases. Not long afterward he told Mr. Rockefeller how engrossed he had become in this book and that he wished to present him with a copy, which he did. Soon afterward, Mr. Rockefeller told Mr. Gates that he was surprised to know that medicine was such a wonderfully progressive science and to learn what good work this man Osler was doing in Baltimore. Mr. Gilman was naturally much interested in Mr. Gates' story, and when he had finished he said: 'Now, Mr. Gates, if you would sit down tomorrow and write Dr. Osler what you have told me, I am sure he would feel very gratified.' Accordingly, in a few days I received a letter from Mr. Gates to the effect of the foregoing. After reading it, I handed it to Mrs. Osler, saying: 'Please put this letter in the safe. There may come a time when it will prove of service.'"

Dr. Osler went on to say: "A few years later when the Baltimore fire occurred and subjected the Hopkins Medical School to such a loss, I asked Mrs. Osler to look up the letter from Rockefeller's man. The letter was readily found and I wrote immediately to Mr. Gates, saying: 'You are doubtless aware of the awful fire which has visited Baltimore and of the loss which Hopkins has sustained. Several years ago you wrote me a very interesting letter, and it just occurred to me that probably you could interest Mr. Rockefeller in considering our unfortunate position at this time.'

"A few days later I received a telegram saying: 'Our Mr. Murphy will be with you tomorrow.' And 'tomorrow' 'our Mr. Murphy' came and spent several days in making an accurate estimate of the Hopkins loss. In the evening we had him at the Maryland Club and showed him that we were pretty good fellows!

"After Mr. Murphy's departure, several weeks expired. They seemed like months. We heard nothing, and our hopes had waned considerably, when I received a letter from John D., Jr., saying: 'My father has carefully considered your losses, which total $430,000.67, and he wishes to know whether you would prefer to have a check or securities for the amount of $500,000.' I immediately took my letter of good news around to the treasurer, and Mr. Rockefeller was informed that we would be pleased to receive a check for the $500,000."

It was misting and cool, one day. Several of us were standing around the fire-place waiting for the lunch bell to sound. Just then Dr. Osler came in, bareheaded and without an overcoat. Lady Osler looked at him and exclaimed in astonishment: "Why, Sir William, what do you mean by running around here in the rain, bareheaded and without an overcoat?" Sir William, who was just getting over a severe cold, evidently could find no plausible explanation for his carelessness, and replied, with a smile: "Well—ah—well, what's a little rain!" Mrs. Osler smilingly said: "Oh, you are getting quite smart. I think it is time I was taking you back this afternoon to Oxford, although I believe you would really rather stay here." Dr. Osler acquiesced: "After I have been around those antiques at Oxford for a while I don't know what I should do now and then unless I came down here with the boys."

EDGAR L. GILCREEST, M.D., San Francisco.
University of California.

"THE IMMEDIATE STERILIZATION AND CLOSURE OF CHRONIC INFECTED WOUNDS"

To the Editor:—In his article on the use of zinc chlorid in the sterilization of chronic infected wounds (THE JOURNAL, May 8, 1920, p. 1301), Dr. Babcock has treated altogether too briefly the danger in the use of this method, and has not sufficiently emphasized the caustic properties of a saturated solution of zinc chlorid on the walls of blood vessels. It is a powerful caustic reagent, capable of deep penetration, producing an eschar; and if brought in contact with a large artery or vein, as the femoral vessels, may cause a sudden profuse secondary hemorrhage which can be controlled only by ligation. This fact was repeatedly noted among the cases of chronic osteomyelitis of the femur in which operation by this method was performed at Fort McPherson, particularly when the solution was injected under pressure with a syringe.

In August, 1919, this method of introducing zinc chlorid throughout the fistulous tract was practically abandoned for this very reason. I believe it is a mistake to recommend the method to one who does not realize the danger, without making due emphasis on what one may expect. As has been borne out by experience, the patient after operation must be kept under most careful observation even as long as ten days, since instances of severe hemorrhage have occurred many days after operation, attributed by the pathologist to an erosion of the wall of a large vessel due to zinc chlorid.

Another point to be borne in mind is the toxicity of zinc chlorid, as a fraction of a drop injected into the ear vein of a rabbit has resulted in instant death to the animal.

It has occurred to me to write this letter because of the fact that shortly after the publication of this article I saw a case of a chronic osteomyelitis of the head and neck of the femur, and the attending surgeon proposed the injection of zinc chlorid into the sinus according to the method described by Dr. Babcock. The sinus was in the femoral region in very close proximity to the femoral vessels just below Poupart's ligament, and the proposed injection of zinc chlorid under pressure into this sinus would be attended with grave danger of a severe hemorrhage.

CLARENCE H. HYMAN, M.D., Cleveland.

"GAS CYSTS OF THE ABDOMEN"

To the Editor:—Apropos of an editorial entitled "Gas Cysts of the Abdomen" (THE JOURNAL, May 15, 1920, p. 1404), I reported such a case in THE JOURNAL, Dec. 19, 1919, under the title of "Emphysema of the Cecum." This case also was overlooked by Sloan (*Surg., Gynec. & Obst.* **30**:389 [April] 1920) who is referred to in your editorial. His case appears to be the fourth reported in the United States. The first was

by Finney (THE JOURNAL, Oct. 17, 1908, p. 1291), said to be the nineteenth in the literature. The second was by Tunure, *Ann. Surg.* **57**:811, 1913, the third by myself and the fourth by Sloan, with excellent remarks on pathology by Karsner. The title, "Diffuse Emphysema of the Intestinal Wall," which is used by Nitch and Shattuck (Proc. Royal Soc., Pathological Section, February, 1920), seems best to describe the condition in all its phases.

E. D. TWYMAN, M.D., Kansas City, Mo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

RECKLINGHAUSEN'S DISEASE WITH SUPRARENAL INSUFFICIENCY

To the Editor:—In THE JOURNAL, May 22, 1920, is an abstract of an article on the treatment of Recklinghausen's disease with suprarenal extract by Chauffard and Brodin. Would it be possible to inform me how this treatment was carried out, whether 1:1,000 epinephrin was used, and if so whether by mouth or intravenously. I have a case diagnosed as neurofibromatosis in my service and would like to try the suprarenal treatment if I knew more about it.

ARTHUR J. ATTRIDGE, M.D., Providence, R. I.

ANSWER.—The only description of the treatment is that "suprarenal opotherapy was given for a few days in the form of suprarenal tablets (*comprimés surrénaux*). The general condition improved, the blood pressure rose from 15 to 17 (Pachon) and kept at this level on suppression of the treatment." The assumption of suprarenal insufficiency was based on the diffuse bronzing (*mélanodermie*); the symmetrical pigmentary patches; the rather symmetrical arrangement of the forty cutaneous or subcutaneous fibromas; the low blood pressure in the apparently vigorous man of 32, and the presence of a large glandular process in the neck, of four years' standing, apparently a tuberculous adenopathy. Chauffard reported in 1896 a case of pigmentary fibromatosis in which both suprarenals were the seat of malignant disease, and Bourcy has since reported a similar case. Oddo and Jullien noted pigmentation of the mucous membranes in three cases of Recklinghausen's disease, and in three cases on record, as in the case here reported, suprarenal treatment was followed by immediate and notable improvement (Pic and Jullien). The writers conclude with the remark that "the fibromatous process may invade the suprarenals, and thus is explained part at least of the symptomatology of Recklinghausen's disease."

ACETYLSALICYLIC ACID AND "ASPIRIN BAYER"

To the Editor:—Is the acid acetylsalicylic, advertised by some manufacturers at cheap prices, identical with aspirin, and can it be relied on as an efficient substitute?

C. E. W.

ANSWER.—The following products have been tested and found satisfactory by the Laboratory of the Council on Pharmacy and Chemistry of the American Medical Association, and the products are described in New and Nonofficial Remedies:

"Acetylsalicylic Acid, Heyden," Heyden Chemical Works.
"Acetylsalicylic Acid, M. C. W.," Mallinckrodt Chemical Works.
"Acetylsalicylic Acid, Merck," Merck & Co.
"Acetylsalicylic Acid (Aspirin) Monsanto," Monsanto Chemical Works.
"Acetylsalicylic Acid-P. W. R.," Powers-Weightman-Rosengarten Company.
"Acetylsalicylic Acid-Squibb," Squibb and Sons.
"Aspirin-L and F." Lehn and Fink.

An examination made in the laboratory two years ago showed that the market supply of acetylsalicylic acid at that time was of equal quality with the German-made "Aspirin Bayer." The inquirer will be interested to learn that the "Aspirin Bayer" now made in America, and exploited with misleading claims in advertising issued by "The Bayer Company," is actually controlled by the Sterling Products Company, which sells "patent medicines," such as cascarets, danderine, etc.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Chairman, Dr. S. W. Welch, Montgomery.
ARIZONA: Phoenix, July 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CALIFORNIA: San Francisco, June 28-July 1. Sec., Dr. Chas. B. Pinkham, 135 Stockton St., San Francisco.
COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, July 13-14. Sec., Regular Board, Dr. Robert L. Rowley, 49 Pearl St., Hartford.
CONNECTICUT: New Haven, July 13. Sec. Eclectic Board, Dr. James Edwin Hair, 730 State St., Bridgeport. Sec. Homeo. Board, Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DELAWARE: Wilmington, June 15-17. Pres. Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
DISTRICT OF COLUMBIA: Washington, July 13-15. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
FLORIDA: Eclectic Board, Jacksonville, June 18-19. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.
FLORIDA: Regular Board. Jacksonville, June 14-15. Sec., Dr. Wm. M. Rowlett, Citizens Bank Bldg., Tampa.
ILLINOIS: Chicago, June 14-17. Director, Mr. Francis W. Shepardson, Springfield.
INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, Crawfordsville.
IOWA: Iowa City, June 16-18. Sec., Dr. Guilford H. Sumner, Capitol Bldg., Des Moines.
KANSAS: Topeka, June 15-16. Sec., Dr. H. A. Dykes, Lebanon.
MAINE: Portland, July 6-7. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MARYLAND: Baltimore, June 15. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MISSOURI: St. Louis, June 14-16. Sec., Dr. Geo. H. Jones, State House, Jefferson City.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, State House, Trenton.
NEW MEXICO: Santa Fe, July 12-13. Sec., Dr. R. E. McBride, Las Cruces.
NORTH CAROLINA: Raleigh, June 21. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. Geo. M. Williamson, 860 Belmont Ave., Grand Forks.
OKLAHOMA: Oklahoma City, July 13-14. Sec., Dr. James M. Byrum, Mammoth Bldg., Shawnee.
OREGON: Portland, July 6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.
PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Sec., Dr. Thos. E. Finnegan, State Capitol, Harrisburg.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
SOUTH DAKOTA: Deadwood, July 13. Sec., Dr. Park B. Jenkins, Waubay.
TEXAS: Galveston, June 22-24. Sec., Dr. Thos. J. Crowe, Trust Bldg., Dallas.
UTAH: Salt Lake City, July 5-6. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.
VERMONT: Burlington, June 29-July 1. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 22-25. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.
WASHINGTON: Seattle, July 6-8. Sec., Dr. Wm. M. O'Shea, 305 Old National Bank Bldg., Spokane.
WEST VIRGINIA: Charleston, July 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
WISCONSIN: Milwaukee, June 29-July 1. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Utah January and April Examinations

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, Jan. 5-6, 1920. The examination covered 19 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 2 candidates examined, 1 passed and 1 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
John A. Creighton Medical College	(1919)	1
FAILED		
St. Louis College of Phys. and Surgeons	(1918)	1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Northwestern University	(1916)	Illinois
Columbia University	(1918)	New York
Jefferson Medical College	(1873)	Colorado

Dr. Harding also reports the written examination held at Salt Lake City, April 5-6, 1920. Two candidates were examined and passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
University of Illinois	(1920)	1
Jefferson Medical College	(1919)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1919),	(1920)	Illinois
Kentucky School of Medicine		(1906)	Nevada
Tulane University		(1904)	Texas
Columbia University		(1918)	New York
University of Pennsylvania		(1912)	Penna.

Connecticut March Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination, held at New Haven, March 9, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Two candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Minnesota Coll. of Homeo. Med.		(1905)	86
New York Homeo. Med. Coll. and Flower Hospital		(1919)	92

Maine March Examination

Dr. Frank W. Searle, secretary of the Maine State Board of Registration in Medicine, reports the written examination held at Portland, March 9-10, 1920. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the three candidates examined, 2 passed and 1 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University		(1918)	83
McGill University		(1918)	85
	FAILED		
Montreal School of Medicine and Surgery		*(1919)	77

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Woman's Medical College, New York City		(1890)	New Hamp.

*Fell below 60 per cent. in anatomy.

Book Notices

SYPHILIS: A TREATISE ON ETIOLOGY, PATHOLOGY, DIAGNOSIS, PROGNOSIS, PROPHYLAXIS AND TREATMENT. By Henry H. Hazen, A.B., M.D., Professor of Dermatology and Syphilology, Medical Depar ment of Georgetown University. Cloth. Price, $6. Pp. 647, with 160 illustrations. St. Louis: C. V. Mosby Company, 1919.

The need of "a small book covering the whole field of syphilis in an authoritative way" is stated in the preface. The author and his collaborators are to be congratulated on their success in meeting this need. Dr. Reasoner writes on infection and immunity, Dr. H. A. Fowler on the male genito-urinary tract, Dr. John Dunlop on the bones, joints, muscles, tendons and bursae, Dr. John Lind on the central nervous system, with contributions by Dr. John Hough, Dr. Virginius Dabney on the eye, Dr. L. H. Greene on the ear, Dr. Craig on the Wassermann reaction, Dr. Schamberg on the toxicology and therapeutic testing of arsphenamin, and Dr. Walter van Sweringen on roentgenography in the diagnosis of syphilis. The author also acknowledges his indebtedness to Dr. Edward Hiram Reede in the chapter on affections of the endocrine glands. The material is necessarily presented in brief form. No space is wasted, however, and the excellent bibliography supplies those who would study any part of the subject more extensively. Some important subjects have been given scant attention. Secondary papules on the palms and soles, for intance, certainly deserve more than passing notice. Criteria of cure and differentiation between the various spirochetes might well have been accorded more space. The index, too, could well be made more extensive. Differential diagnosis on the whole is well presented, more thoroughly than in many of the standard books. This makes it a valuable work for the general practitioner. Especially worthy of mention is the discussion of prognosis, treated by Dr. Hazen with common sense and moderation, avoiding the extremes of pessimism and of optimism. The discussion by Craig of the interpretation of the results of the Wassermann reaction is also to be commended as a sensible presentation of facts which, if applied to the work of the laboratory and the estimation of its value by the clinician, would clear up a great deal of the misunderstanding and false interpretation of that important test. The book presents a great mass of invaluable information in a readable form. It is well printed on good paper, and the illustrations are good.

MANUAL OF OBSTETRICS. By Edward P. Davis, A.M., M.D., F.A.C.S., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Second edition. Cloth. Price, $3 net. Pp. 478, with 163 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This is a concise manual of modern obstetrics. In it Davis has covered the subject in a thorough and logical manner, and has brought the subject matter of this second edition well up to date. It can be recommended as a handbook for students and as a reference book for nurses who specialize in obstetric nursing. The print is large and easy to read, the illustrations numerous and clear, and the publication carefully done. One of the few mistakes in proof-reading occurs on page 95 under the caption of the physiology of pregnancy, where Davis says: "If the patient is not well nourished during pregnancy the alkalinity of the blood increases." He doubtless means "decreases." In discussing the diagnosis of pregnancy he states that "the eyes must be noted for signs of exophthalmic goiter," thus giving the impression that the latter condition is a usual accompaniment of pregnancy, whereas it is one of the rare complications. Again, under diagnosis of pregnancy by the roentgen ray, he is vague as to just when in pregnancy the roentgen ray will show the fetal skeleton, and he fails to mention its value near term in recognizing multiple pregnancy. Occasionally a statement is found which is more confusing than helpful, such as: "The presence or absence and the degree of leukocytosis should indicate the power of the patient's resistance and the possibility of infection and suppuration." This quotation, taken from the diagnosis of broad ligament pregnancy, does not in any sense contribute to the diagnosis of the condition under discussion. For the most part, Davis' treatment is based on sound principles and good judgment; however, such advice as : (*a*) the use of from 1 to 1.5 c.c. of pituitary extract in inertia (p. 222); (*b*) the use of a sharp spoon curet for interruption of pregnancy (treatment of toxemia of pregnancy); (*c*) the application of forceps to the breech (forceps), and (*d*) instructing nurses to give intracervical douches in postpartum hemorrhage, is risky if not actually dangerous advice. Still one more statement requires revision, which appears in the description of the technic of the Braxton Hicks version: "The operator observes antiseptic precautions, and if he is accustomed to work with rubber gloves he should use them." There is no *if* in the obstetrics of today!

ORTHOPEDIC AND RECONSTRUCTION SURGERY, INDUSTRIAL AND CIVILIAN. By Fred H. Albee, A.B., M.D., F.A.C.S., Professor and Director of Department of Orthopedic Surgery, New York Post-Graduate Medical School. Cloth. Price, $11 net. Pp. 1138, with 804 illustrations. Philadelphia: W. B. Saunders Company, 1919.

This book is extensive in its scope, including the ordinary field of orthopedic surgery, with military and much of general surgery of the extremities as a text. It lacks balance in that topics are unevenly discussed. Those in which the author is especially interested and previously contributed, as tuberculosis, are generally given in great detail with much argument in favor of his methods, while others, as osteomyelitis, are incomplete. It is essentially a treatise on therapy, and a commendable feature is that operative methods receive much more attention than is given in other books on orthopedic surgery. The accounts of the author's extensive experience, especially in the field of bone transplanation, are of great importance. Aside from bone repair, the pathology is not well given. Too much space is devoted to arguments in favor of the author's methods and in establishing his priority for various operative procedures. A valuable bibliography is attached to each chapter.

Medicolegal

Liability for False Representations as to Disease

(Manweiler et al. v. Truman (Ind.), 125 N. E. R. 412)

The Appellate Court of Indiana, Division No. 2, affirms a judgment for $100 damages in favor of plaintiff Truman in this action brought to recover for alleged false representations made to her by the defendants with regard to the nature of the disease with which one of them was suffering. The court says that the plaintiff alleged in her complaint that the defendants came to her home and represented to her that defendant Manweiler was sick with lung fever, and that they had no place where he could be taken care of, and requested her to take him into her house and care for him until he was well enough to be moved; that he was so sick that he could not be taken to a hospital; that he was not ill with a contagious disease; that she told them that she could not take him or care for him if he was sick with a contagious disease; that she relied on the defendants' statement that he was not sick with a contagious disease, and took him into her house; that a short time thereafter she learned that he was so ill with diphtheria that he could not be moved; and that in order to save his life she nursed and cared for him. It was also alleged that when the defendants made these representations to the plaintiff they knew of Manweiler's true condition, and by reason of their false statements caused her to take him into her home. The defendants contended that there was no evidence of intent or design on their part to perpetrate a fraud on the plaintiff; that whatever statements were made by them were made in good faith and based on the statement of a reputable physician. But the question as to whether the defendants falsely represented that Manweiler was sick with lung fever when they knew he was suffering with diphtheria, or whether they acted in good faith with the plaintiff was a question of fact for the jury, and the latter found specifically that the defendants, at the time they took Manweiler to the home of the plaintiff, knew he was suffering with a contagious disease, and that they then knowingly perpetrated a fraud on her. This court cannot set its judgment on the weight of the evidence against that of the jury and the trial judge, and say that there was reversible error on the ground that the verdict was not sustained by sufficient evidence.

Insufficient Evidence of Malpractice—Improper Reference to Insurance Company

(Sherwood v. Babcock (Mich.), 175 N. W. R. 470)

The Supreme Court of Michigan reverses a judgment for $1,000 damages that was rendered against the defendant for alleged malpractice, and orders that in its stead a judgment be entered for the defendant, notwithstanding that the verdict of the jury was against him. The court says that, in April, the defendant was called to the home of the plaintiff to treat a grandchild of the latter named Edwin Sen, who died on May 16. The case was diagnosed by the defendant as one of pneumonia, but meningitis developed, which was the immediate cause of death. Then a child of the plaintiff, named Irene, became ill, and died on May 30, the cause of her death being reported as typhoid fever. Also, two younger children were taken ill, after Irene, and their illness was diagnosed as typhoid fever, for which they were treated, and from which they recovered, although soon after the death of Irene the defendant was discharged, and another physician was called to take charge of them. The defendant consulted with another physician twice, and with two other physicians once, during the attendance on the family. Three claims of negligence were alleged: (1) Failure of the defendant to segregate the other children from Edwin Sen when he was taken ill; (2) failure to report the illness of Edwin Sen to the health board; (3) and not treating the children for cerebrospinal meningitis. When the other physician was called to take charge of the younger children they were canvalescing. The defendant complained that, in spite of the fact that there was no medical testimony supporting the allegations in the plaintiff's declaration, and that all the medical testimony was in direct contradiction of those claims, the case was submitted to the jury and the verdict rendered and judgment entered for the plaintiff. The trial judge seemed to have submitted the case to the jury on the theory that it had a right to gather from the symptoms given by the plaintiff and his wife, which they observed during the illness of the children, coupled with the statement of the second physician that he treated the patients as though they were suffering from meningeal infection, whether or not Edwin Sen had cerebrospinal meningitis, and whether or not the other children were suffering from the same disease. But, from a careful reading of the record, the supreme court is impressed with the fact that the verdict and judgment entered were contrary to the great weight of the evidence in the case. It is impressed with the contention that a judgment should have been entered in favor of the defendant notwithstanding the verdict of the jury, and that error was committed in overruling a motion therefor. A careful reading of the testimony of the second physician showed that it fell far short of furnishing evidence that any of the children had cerebrospinal meningitis. He used the words "possibility," "suspect" and "perhaps." The testimony was too problematic and speculative to warrant the submission of the question to the jury. It gave the jury an opportunity to speculate, and the evidence failed to make a case of malpractice.

The court is also impressed with the contention that it was prejudicial error for counsel for the plaintiff to say, in his argument of the case to the jury, "It is for you, gentlemen, to say whether Dr. Babcock or the insurance company, whose very able attorney is here today. . . ." This language was not only improper, but was reprehensible, and was used without any provocation, there not being a word of testimony in the case with reference to an insurance company.

Rules Relative to Insanity as a Defense to Crime

(Thomson v. State (Fla.), 83 So. R. 291)

The Supreme Court of Florida, in reversing a conviction of murder on the ground that the evidence raised a reasonable doubt as to the defendant's sanity at the time of the homicide, says that when the defense of insanity is relied on, the rule in force in the state of Florida is that if the evidence introduced tends to rebut the presumption of sanity on the part of the accused, and the jury entertains a reasonable doubt, after due consideration of all the evidence as to his sanity, it is their duty to acquit.

The statutory definition of murder, "the unlawful killing of a human being, when perpetrated from a premeditated design to effect the death of the person killed," includes the element of a rational agency, and it devolves on the state to show this as well as any other element of the crime. The law, however, presumes that all men are sane, and, in the absence of evidence indicating a contrary state of mind, both court and jury are justified in acting on this presumption; and when the evidence establishes the criminal act, and indicates nothing as to the mental capacity of the accused to commit the deed, a conviction is not only authorized, but should be had. If, however, there arises from the evidence coming from any quarter a reasonable doubt as to the sanity of the accused, the presumption of law is overcome, and he is entitled to an acquittal, unless the state meets and overcomes this reasonable doubt arising in his favor.

When insanity of a permanent type, or of a continuing nature, or possessed of the characteristics of an habitual or confirmed disorder of the mind, as distinguished from temporary or spasmodic mania, or disorders of mind produced by the violence of disease, is shown to have existed a short time prior to the commission of an act, it is presumed to continue up to the time of the commission of the act, unless this presumption is overcome by competent testimony.

When insanity of the defendant is a real issue in a criminal prosecution, the court should charge the jury that, if the defendant is acquitted on the ground of insanity, the jury should so state in the verdict in order that appropriate action may be taken by the court under Section 3992 of the General Statutes of 1906.

Society Proceedings

COMING MEETINGS

American Climatological and Clin. Assn., Philadelphia, June 17-19.
American Ophthalmological Society, Hot Springs, Va., June 15-16.
Canadian Medical Association, Vancouver, B. C., June 22-25.
Maine Medical Association, Augusta, June 29-30.
Montana State Medical Association, Helena, July 14-15.
Nevada State Medical Association, Lake Tahoe, June 25-26.
New Jersey Medical Society, Spring Lake, June 15-17.
North Dakota State Med. Assn., Minot, June 15-16.
Southern Minnesota Medical Assn., Fairmont, Minn., June 28-29.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION

Annual Meeting, held in Atlantic City, N. J., May 3, 1920

(Continued from page 1600)

Certain Phases of the Histamin Problem

DRS. KARL K. KOESSLER and MILTON T. HANKS, Chicago: Perfectly fresh total glands of steers were used. It was found that there is no histamin present in the hypophysis. A typical peptone shock was obtained by the injection of a histamin free peptone; hence peptone shock and histamin shock are not identical. It was found that Witte's peptone—100 gm.—contains the equivalent of 0.00335 gm. of histamin dichlorid.

Basal Metabolism from Birth to Puberty

DR. FRITZ B. TALBOT, Boston: The great interest in basal metabolism is evidenced by the increasing number of reports of the basal metabolism of pathologic conditions. In the past there has been no standard for comparison of infants and children other than the scattered observations of Rubner, Du Bois, Murlin, Howland and a few others. The basal metabolism of normal infants and children has been studied by Benedict and myself during a period of eight years, ending in June, 1919. In this series of investigations were included more than a hundred normal male children and seventy normal female children. In many cases the metabolism of the same child was obtained at different ages. Curves of the total metabolism for twenty-four hours as referred to age and weight, to the metabolism per kilogram referred to both age and weight, and to the metabolism per square meter of body surface referred to both age and weight, may be taken as standards to which may be applied observations on pathologic conditions.

Relation of Sputum Bacteria to Asthma

DR. FRANCIS M. RACKEMANN, Boston: Asthma is a syndrome that may be divided according to its cause into two groups, extrinsic and intrinsic. We are here concerned with those cases of intrinsic asthma in which a focus of bacterial infection in the bronchi is assumed to be the cause. The method of study has been to make intradermal tests with pure vaccines made from organisms isolated on blood agar plates from the patient's sputum, and to institute treatment on the basis of these tests. An early positive skin test was found in one-half hour to consist of an urticarial wheal surrounded by erythema, but late positive tests were found in twenty-four hours to resemble an inflammation. One hundred and twenty-nine organisms were isolated from thirty-nine patients. They included nonhemolytic streptococci, 60 per cent.; hemolytic streptococci, 13 per cent, and staphylococci, 8 per cent. The pneumococcus was found only three times. Twenty-five of this group of thirty-nine patients gave a positive test to one or more vaccines. There were twenty positive tests to an autogenous vaccine and fifteen positives to a heterologous vaccine. In addition to this original group, seventeen patients were tested with only heterologous vaccines, and nine reacted positively. Thus, in the whole group of fifty-six patients, thirty-four, or 67 per cent., gave a positive skin test.

Taking the two groups together, 358 individual intradermal injections were made; 19.5 per cent. of these were classed as positives, which figure includes 7.5 per cent. early positive, 7.2 per cent. late positive, and in addition 4.8 per cent. positive both early and late. With reference to the individual organisms, and considering only those tested on at least five patients, a total of 283 tests were made with thirty-two different vaccines. Fourteen of these thirty-two organisms gave no test at all, and of the four that did give more than two positives, one was a hemolytic streptococcus with three positives, and two were *Staphylococcus albus* with four each. One, a gram negative bacillus, was irritating in that ten positives were obtained in eighteen tests. Treatment with small doses of pure vaccines given at seven-day intervals was carried out in twenty-six patients with results that were in very close accord with the presence or absence of a positive skin test. Of the sixteen patients who were treated with the organism to which they gave a positive test, fourteen were treated successfully. In ten instances this treatment was with an autogenous vaccine. However, ten other patients were treated in the face of a negative test, but with no success at all. The organisms used in treatment, whether successful or unsuccessful, included representatives of each variety found, but were mostly nonhemolytic. These results indicate that the treatment of intrinsic asthma with vaccines is specific.

DISCUSSION

DR. KARL K. KOESSLER, Chicago: Several years ago Dr. Moody and I reported on the results of a bacteriologic study of the aerobic and anaerobic micro-organisms isolated from the bronchial expectoration of patients suffering from bronchial asthma. We emphasized that in the treatment of this disorder by means of bacterial autogenous vaccines, it is essential for obtaining the best therapeutic results to incorporate in the vaccine the anaerobic organisms, together with the common aerobic (streptococci, pneumococci, pneumobacilli, *Micrococcus catarrhalis*, staphylococci, etc.), for the anaerobic bacteria and cocci often show a stronger proteolytic power than the aerobic ones, an activity of fundamental bearing in the production of the bacterial type of asthma. The invasion of the bronchial structure by micro-organisms might produce bronchospasm in a variety of ways. Destruction of the protecting layer of the ciliated epithelium, with losses of substance or minute ulcer formation involving the submucosa, exposes the contracting mechanisms to thermal as well as chemical influences (comparable to similar mechanism underlying pylorospasm and angiospasm). Toxic material formed by micro-organisms in the bronchial structure itself can thus be easily absorbed. But also through the blood and lymph way, toxic substances of the type of histamin can be absorbed even from distant foci of infection, associated invariably with protein destruction, substances which produce a marked spastic contraction of the smooth muscle fiber system of the bronchial structure. We thus believe that a large number of cases of bronchial asthma are the result of amin formation and amin absorption, and belong to a group of disorders for which we might use the term "aminosis."

Further Studies on Active Immunization Against Pneumococcus Pneumonia in Monkeys

DR. RUSSELL L. CECIL, New York: Small doses of pneumococcus Type I saline vaccine, administered subcutaneously, do not confer complete immunity against a subsequent pneumococcus Type I pneumonia, although they do modify favorably the course of the disease. Three large subcutaneous injections of vaccine (20, 40 and 60 billion, respectively) given at intervals of one week cause very little reaction in the monkey, and are sufficient to prevent infection altogether. Small doses of pneumococcus vaccine will also produce an adequate immunity, if given intravenously. Small doses of living virulent sensitized pneumococci, when injected subcutaneously, may give rise to a temporary pneumococcus bacteremia, from which the monkey recovers. Monkeys vaccinated with the sensitized culture of pneumococcus failed to develop pneumonia when injected intratracheally with living virulent pneumococci. At necropsy, however, two of the monkeys in this series showed small multiple abscesses in the lungs. These experiments afford a rational basis for prophylactic vaccination against pneumonia in man. It is true

that the dose of vaccine employed in these experiments was larger than that which is usually administered to man; but on the other hand, it must be emphasized that the monkeys received five or six hundred virulent pneumococci directly into the trachea, while in the case of man, pneumonia is probably induced by a much smaller number of microorganisms.

Effect of Salicylates on Formation of Immune Bodies

DR. HOMER F. SWIFT, New York: The known action of salicylates is as an antipyretic and an analgesic in concentrations that can be safely administered. In strong concentrations it is also antiseptic; but in the concentrations in which it is present in the body, it is considered as having no antiseptic action. Whether it exerts an antibacterial action in the body in therapeutic concentrations is as yet not established. In addition to the above mentioned actions which are exerted in many diseases, in rheumatic fever it has apparently a true antiphlogistic action, as shown by the rapid recession of the various signs of acute inflammation about the affected joints, following its administration in sufficient doses, as well as by the arresting of the spread of the affection to other joints. It is evident, however, that the course of the general infection is not shortened, nor are the cardiac complications prevented by the drug. Consequently, it seemed of interest to determine the exact influence of salicylates on the development of immunity. The averages of several animals showed that the group that received salicylates had a lower antibody formation than the untreated controls. The difference was more marked in those experiments in which the antigen was given in small amounts with a correspondingly low concentration of antibodies in the entire group. The same general result was found with all three types of antibodies studied. An effort was then made to determine the mechanism of this depression in the formation of antibodies. The salicyl-treated animals showed no greater loss in weight or appetite, nor more marked depression in the condition of the salicyl-treated animals than in the controls. When the bacteria were given in the living state, the febrile response was as great in the salicyl-treated animals as in the controls. The effect of exposure of antigen to solutions of sodium salicylate in vitro and subsequent injection of the salicylated bacteria or red blood cells pointed to the depression's being due to a direct action of the salicyl on the antigen. In two series of experiments, untreated controls showed the highest antibody curve; the next highest was shown by the animals that received salicylates by mouth and antigen intravenously, and the lowest by the animals that were immunized with salicylated antigen. Marjorie Cook has lately shown that the formation of antibody is dependent on the rate of absorption of the antigen. Reasoning by analogy of effect, it is suggested that the depression of antibody formation may be due to a decreased rate of absorption of the antigen in salicyl-treated animals. It is also suggested that the antiphlogistic effect may be due to a depression of the irritative properties of the etiologic agent in rheumatic fever.

"Acute Dilatation of the Heart," So-Called, Occurring During or Following Surgical Operations; Its Mechanism and Management

DR. SAMUEL A. LEVINE, Boston: Sudden cardiac upsets were observed in nine surgical patients at the Peter Bent Brigham Hospital. The condition was called acute dilatation of the heart in some cases, and might well have been similarly diagnosed in the others had not the true nature of the disorder been discovered. "Acute dilatation of the heart" has been used as a medical waste-basket; whenever possible (as happened in all of the cases taken up here) a more definite and well understood name should be given to the condition. The upsets all occurred suddenly and unexpectedly; three while the patients were under ether anesthesia (one before the actual operation had started, one during the operation and one just after it had been completed), and the other six during surgical convalescence, from one to nine day after the operation. The attacks varied in severity from being entirely unobserved by the patient to complete collapse, with cessation of breathing, cyanosis and danger of impending death. The duration of the attacks was from several minutes to several days. How long those attacks that were deliberately arrested by medical procedures would have lasted it is difficult to tell. Electrocardiograms of six of the patients were taken during the upset, and the clinical course of the other three left no doubt as to the diagnosis. Three were found to be due to paroxysmal auricular tachycardia, four to paroxysmal auricular fibrillation, and two to paroxysmal auricular flutter. All but two were transient in nature. The three cases of paroxysmal auricular tachycardia occurred while the patients were under ether anesthesia, and in each instance the attack ended either by direct vagal pressure over the carotid artery or by ocular pressure. One of them went into collapse on the operating table, stopped breathing, the heart rate suddenly jumped to 216, and the life of the patient seemed to be in imminent danger. Left vagal pressure brought the attack suddenly to an end. The proper administration of digitalis controlled the heart's action in the cases of paroxysmal auricular fibrillation and flutter.

In reviewing these nine cases, no constant etiologic factor could be found. It seems impossible to predict what type of surgical patient will have a paroxysmal cardiac upset, and very likely some of these patients would have had similar paroxysms at some future date even if they had not been subjected to operations. Roentgen-ray studies of the size of the heart could not be made during these attacks, but others in the medical wards have had roentgenograms taken during and after similar attacks without showing any appreciable dilatation, except in a very rare instance. It is important to appreciate that "acute dilatation of the heart" is a medical diagnosis which rests on very insecure ground, and that wherever possible, careful observations of the mechanism of the heart beat should be made, in the hope of accurately describing the condition and instituting the proper treatment.

The Enzymes of Pneumococcus

DRS. O. T. AVERY and G. E. CULLEN, New York: In the study of the enzymes of pneumococcus, use has been made of the fact that pneumococci rapidly undergo solution in the presence of bile. By dissolving the organisms in bile and testing the cell-free solution on suitable substrates, enzymes are readily demonstrable. These enzymes possess the power of actively hydrolyzing peptones to simpler peptids and amino acids; of converting carbohydrates into simpler products, and of splitting esters into fatty acids. In demonstrating carbohydrate cleavage, however, bile was found to inhibit completely the hydrolysis of sucrose and starch, so that a different method of preparing the enzyme solution was necessary. For this purpose it was found that the organisms suspended in tenth molar phosphate solution of p_H 6.2 undergo disintegration quickly with the release of intracellular substances capable of actively hydrolyzing carbohydrates. By the methods described it is possible to prepare enzyme solutions which are sterile and by bacteriologic technic to maintain sterility throughout the experiment, without the use of antiseptics.

Evidence is presented that these enzymes exist preformed within the bacterial cell and are therefore of the type known as endo-enzymes. The proteolytic enzymes exhibit greatest activity in the further hydrolysis of the intermediate products of protein digestion, such as peptones. From 30 to 40 per cent. of the available peptid-nitrogen in peptone substrates is split to amino nitrogen. This fact, together with the observation that the zone of its optimal activity is p_H 7.8, indicates that this enzyme is erepsin-like in character. The curve of its activity rapidly falls with increasing acidity, until at a p_H of 4.5 complete inhibition results. The proteolytic enzyme is sensitive to heat; an exposure of ten minutes at 100 C. destroys its activity. Dissolved in ox-bile, the enzyme retains about 40 per cent. of its activity over a period of six weeks.

By similar methods the fact has been established that within the pneumococcus cell there exists a remarkably active lipase; the acid formed by its action on 2 per cent. tributyrin representing a normality of about twentieth normal butyric acid. The maximum activity of the intracellular lipase occurs at a reaction of p_H 7.8, and progressively decreases with increasing acidity of the substrate. The optimal reaction corresponds closely with that of the endopeptonase, and

both coincide with the optimum hydrogen ion concentration for growth of pneumococcus. It has been found that loss of virulence is not associated with a corresponding loss of either erepsin or lipase activity.

In germ-free filtrates of broth cultures of pneumococcus, enzymes are found free in solution only when growth has progressed to the phase in which cell disintegration begins and liberation of the intracellular substances into the culture medium occurs. During the early stages of growth of pneumococcus when, under optimal cultural conditions, organisms are multiplying at their maximum rate, and little or no cell death is occurring, enzymes cannot be detected in culture filtrates.

The inhibiting action of bile on the activity of the carbohydrates, splitting enzymes of pneumococcus is overcome by effecting cytolysis of the bacterial cells in phosphate solution at p_H 6.2. Alternate freezing and thawing of the bacterial suspension greatly facilitates rupture of the cell membrane and liberation of the intracellular substances. In this manner it has been demonstrated that there exist intracellular enzymes capable of converting sucrose into monosaccharids (invertase), of splitting starch through the dextrin to reducing sugars (amylase), and of hydrolyzing inulin (inulinase). The zone of hydrogen ion concentration in which these enzymes are active bears a striking correlation to the biologic activity of the living cell.

In addition, certain other active intracellular enzymes are present in solutions of pneumococcus bodies. These, in brief, are in the nature of bacteriolytic enzymes capable of causing complete and rapid dissolution of heat-killed bacteria.

Effect of Experimental Lesions of Branches of Bundle of His on Form of the Electrocardiogram

DRS. FRANK N. WILSON and GEORGE R. HERRMANN, St. Louis: In a dog attempt was made to cut the left branch of the bundle of His by thrusting a small tenotomy knife through the wall of the left ventricle and pressing the cutting edge against the septum. The characteristic ventricular complexes of left bundle-branch block appeared at once and were recorded. They persisted only a few minutes, however, giving place to complexes of the normal type. Right bundle-branch block was then produced by thrusting the knife through the wall of the right ventricle and pressing on the septum with the noncutting edge. Characteristic ventricular complexes appeared at once and persisted for about one and one-half hours. At the end of this time, complexes of normal type again returned. The dog was killed, the heart was opened, and drawings were made of the branches of the bundle of His and the lesions produced. From a comparison of the lesions produced with the electrocardiograms recorded, we confirmed the belief that lesions of the two chief branches of the bundle of His are accompanied by characteristic electrocardiograms. Lesions of the subdivisions of these branches did not in our experiments produce more than minor changes in the form of the electrocardiogram.

Virulence of Streptococci and Hemolysin Production.

DRS. WARFIELD T. LONGCOPE, F. A. STEVENS and J. W. S. BRADY, New York: The relation between virulence and hemolysin production has been a subject for much controversy because uniform methods have not been used by different workers. The fact that the concentration of hemolysin varies during the growth of a broth culture of streptococcus has been recognized but not applied to the estimation of the minimum hemolytic unit. To determine the point at which the concentration is greatest, hourly hemolysin tests must be made. All other factors except the invasive power of the organism must be constant. The estimation of virulence cannot be based entirely on clinical evidence because of the variations in individuals and in the conditions under which infection takes place.

Strains of beta type streptococcus, from blood cultures or empyeme exudates, *Streptococcus pyogenes* on sugar fermentation (Holman), were passed through mice until the virulence was increased from twenty to thirty times. Equal numbers of living bacteria, in the virulent and avirulent forms of the same strain, were then seeded in flasks of 20 per cent. horse serum broth. At seeding, all factors in the two flasks were similar in every respect. Curves of growth and hemolysin were made, and it was found that in tests with a 5 per cent. suspension of mouse cells in physiologic sodium chlorid solution, both the virulent and avirulent strains produced equal, maximum hemolysin concentrations. Under these conditions, virulence does not influence streptolysin concentration.

Methyl Alcohol Poisoning

DRS. WALTER W. PALMER and GEORGE A. HARROP, JR., Baltimore: In a case of acute methyl alcohol poisoning, it was found that the patient was suffering from a severe acidosis, associated with a marked rise in the excretion of organic acids in the urine, two of which, lactic and formic, were recovered in considerable amounts. We have undertaken further study of this condition experimentally, using dogs. The dosage of methyl alcohol by mouth which will terminate fatally in a day or two if untreated can be determined fairly closely, and is about 12 c.c. per kilogram. On the other hand, such acute death has occurred in but one instance (an animal in bad condition, suffering from severe mange), in which the dosage has not exceeded 10 c.c. per kilogram.

An acidosis has been produced by the administration by stomach tube of amounts of methyl alcohol in excess of 6 c.c. per kilogram. The serum bicarbonate content has ranged between 35 and 20 per cent. by volume. Outspoken dyspnea is not regularly produced—in fact, in the fatal cases death appears to be from respiratory paralysis, the respirations gradually lessening in number. In one animal, observed during two hours before death, the visible respirations did not exceed two or three a minute. The acidosis appears in from twelve to thirty-six hours after the injection of the alcohol, and is associated with a marked rise in the urinary ammonia and in the excretion of organic acids, the amount for twenty-four hours rising from the normal of about 20 c.c. of tenth normal acid per kilogram to from 100 to 150 c.c. per kilogram. As is well known from the work of Pohl, there is a great increase in the excretion of formic acid, which begins, however, somewhat after the first rise in the curve of organic acid excretion. The excretion of formic acid has not accounted for more than 60 per cent. of the total increased organic acid excretion, and in two completed experiments it averages from 20 to 50 per cent. of the latter. The increase in acetone bodies is not much more than can be accounted for by starvation.

We have studied the excretion of methyl alcohol into the stomach. It appears after intravenous injections and was recovered immediately after an injection of as small an amount as 2 c.c. per kilogram. When given by mouth, it has been possible even after twenty-four hours to recover by repeated lavage as much as 10 per cent. of the amount administered. There is no doubt that an active secretion of methyl alcohol into the stomach does occur, and that repeated and thorough lavage over a period of several days is urgently indicated. Small amounts have been recovered as late as the seventh day. Besides removing appreciable quantities of the alcohol, there is less tendency in dogs thus treated to have gastric hemorrhage and bloody diarrhea.

The mechanism of methyl alcohol poisoning is quite unknown except for several isolated facts: It is distributed in approximately equal concentration throughout the body; it is catabolized very slowly with the formation and excretion of formic acid, and it is itself excreted by the lungs and in the urine. Methyl alcohol is known to be less acutely toxic than ethyl alcohol. It therefore seems likely that some other intermediary oxidation product may play a rôle. Such a product is formic aldehyd. We have found traces of formic aldehyl in the blood serum, urine, spinal fluid and aqueous humor of dogs poisoned with methyl alcohol. It is present, it is true, in very small quantities, but the effect of its constant formation in the body over a period of days has not been studied. We do not believe the effect of the injection of doses small enough to be tolerated—and they have to be very small—is a phenomenon comparable with this continuous production over a period of days. Investigation of the part played by this substance and quantitative studies of its formation and excretion are contemplated.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

April, 1920, **159**, No. 4

*Carcinoma of Duodenum. J. B. Deaver and I. S. Ravdin, Philadelphia.—p. 469.
Nutrition and Public Health with Special Reference to Vitamins. J. F. McClendon, Minneapolis.—p. 477.
*Cure of Hookworm Infection. J. L. Kantor, New York.—p. 497.
*Treatment of Catarrhal Jaundice by a Rational Direct and Effective Method. B. B. V. Lyon, Philadelphia.—p. 503.
Occurrence of Hypochlorhydria in Gallbladder Disease. R. C. Fravel, Richmond, Va.—p. 512.
*Treatment of Hypertension. E. Moschcowitz, New York.—p. 517.
*Medical Treatment of Aortic (Thoracic) Aneurysm. W. W. G. Maclachlan, Pittsburgh.—p. 525.
*Significance of Yellow Spinal Fluid. C. H. Nammack, New York.—p. 540.
*Occurrence of Glycosuria in Mushroom Poisoning; Report of Cases. M. E. Alexander, Waterbury, Conn.—p. 543.
*Pulmonary Complications of Paratyphoid Fever; Report of Four Cases. T. Klein and R. G. Torrey, Philadelphia.—p. 548.
*Case of Purpura During Serum Disease. H. E. Meleney, New York.—p. 555.
Prognostic Factors in Pneumonia During Influenza Epidemic. J. H. Smith, Richmond, Va.—p. 561.
*Treatment of Acute Gonorrhea in Females. F. B. Block, Philadelphia.—p. 572.
Sugar Mobilization Based on 228 Human Cases. G. L. Rohdenburg, A. Bernhard, and O. Krehbiel, New York.—p. 577.
*Germicidal Value of Potassium Mercuric Iodid. D. Macfarlan.—p. 586.

Primary Carcinoma of Duodenum.—In the case cited by Deaver and Ravdin the tumor was situated at the terminal end of the second portion of the duodenum. There was no obstruction of the common bile duct, nor evidence of obstruction of the pancreatic ducts, nor other evidence of metastasis. It is believed that this was a case of primary duodenal carcinoma, although the history was very similar to that of ulcer. The rapid loss of weight and the rather short duration of the disease (seven months) on the other hand, would point to primary carcinoma. Carcinoma of the duodenum is found in 0.033 per cent. of hospital necropsies.

Cure of Hookworm Infection.—This paper is based on 231 cases, all of which were observed twenty-nine days or over (up to 228 days in one instance), and no case is reported as a cure that did not show an average of from ten to fifteen consecutive negative stools during a period of four weeks after treatment. The five-stool method of examination was resorted to in each instance. The usual mouth treatment was not very encouraging in its results. Much more efficient results can be obtained by the method of intra-intestinal tube treatment, owing to the fact that the full, concentrated dose of vermifuge is delivered precisely at the point of infection. Instead of 34 per cent. of cures, as in the case of a first mouth treatment, fully 80 per cent. are cured by a first tube treatment. Only one repetition is necessary for the relief of the great majority of infections.

Direct Treatment of Catarrhal Jaundice.—The treatment used by Lyon was as follows: All patients, whether with bronchial conditions or otherwise, were cautioned repeatedly against the swallowing of saliva; noses were sprayed with Dobell's solution; throats gargled with strong potassium permanganate solution, 1 grain to the ounce. A sterile duodenal tube was passed to the stomach in the fasting morning state, the residuum withdrawn for analysis and microscopy, with a sterile individual syringe for each patient. The stomach was washed with water, followed by liquor antisepticus alkalinus (in the hyperacid cases) or hydrochloric acid solutions (in the subacid cases), then water again until the washings were clear. Then 250 c.c. of solution, one day, of potassium permanganate (starting with 1 to 15,000 and increasing to 1 to 8,000 and the next day a solution of silver nitrate (1 to 20,000 to 1 to 10,000) was introduced into the stomach, allowed to remain there three to five minutes, and as much as possible syringed out. The patient was then given a glass of water to drink, turned on the right side and by slow swallowing the tube was allowed to enter the duodenum. When this was reached (in from fifteen to forty-five minutes) the duodenal contents were aspirated for study. In all these cases the duodenum was at first found to be bile-free. After the duodenal contents had been aspirated for study Lyon introduces through the tube 50 to 100 c.c. of 25 per cent. saturated solution of magnesium sulphate and bathes or douches the duodenal mucosa. This is again followed by aspiration.

Treatment of Hypertension.—The diet which Moschcowitz orders for these patients is, in many respects, similar to that of a case of diabetes of fair tolerance. The diet consists principally of fruit, coffee or tea (without sugar), meat, green vegetables, salad, cheese and a limited quantity of bread. In other respects the quantity is not limited. Moschcowitz believes in graduatel exercise. The ideal form of exercise for patients with hypertension is golf. If a sport cannot be undertaken, walking provides an excellent means of exercise. If for one reason or another even walking is not possible, systematic brisk massage will serve up to a certain point as a tolerable substitute for exercise. The patient's improvement may be decided, not by a decrease in systolic pressure but by a decrease in diastolic pressure and consequent rise in pulse pressure. Attempts to reduce the blood pressure by direct methods are futile. Drugs reduce blood pressure, but their effect is evanescent and no permanent gain is ever derived. The use of digitalis, nitrites, iodids, caffein and chloral hydrate in selected cases is discussed.

Antisyphilitic Treatment of Aortic Aneurysm.—Three cases of aneurysm of the thoracic aorta of syphilitic origin are reported by Maclachlan. Two were of massive size. Special emphasis is placed on the value of medicinal treatment of these cases. Iodids, mercury and arsphenamin in addition to the usual hygienic measures yielded excellent results in these cases.

Significance of Xanthochromia.—In acute or subacute conditions, Nammack says, the presence of yellow spinal fluid strongly suggests the probable diagnosis of tuberculous meningitis or poliomyelitis.

Mushroom Poisoning.—The five cases reported by Alexander occurred in one family. A mild nephritis and a renal glycosuria were the persistent and predominating features.

Pulmonary Form of Paratyphoid Fever.—Four of six cases of paratyphoid fever studied by Klein and Torrey have been associated with severe pulmonary disturbances. There seems to be a definite pulmonary form of paratyphoid fever which may be easily mistaken for any of the acute respiratory infections. The pulmonary symptoms and findings often precede any intestinal manifestations. Of the pulmonary complications, bronchopneumonia is the most alarming. The bacilli are found in the sputum. The bacilli have also been isolated from the purulent discharges of a chronic purulent otitis media, caused by other infections previous to the paratyphoid disease and from the secretions of pyorrhea alveolaris.

Purpura from Serum Disease.—The case of purpura reported by Meleney occurred during the course of serum disease following the use of antipneumococcus I horse serum in pneumonia. The elements of blood coagulation were normal, and it is therefore probable that the purpura was due to the presence of a toxin associated with the attempt of the body to eliminate the foreign protein. The evidence points to the capillary walls as the site of the lesion.

Treatment of Gonorrhea in Women.—Santal oil, in 10 minim doses, three times daily, and a urinary sedative containing 5 minims of tincture of hyoscyamus and 10 grains of sodium bromid to 1 dram of the liquor of potassium citrate, every three hours, are used by Block in the treatment of the acute urethritis of gonorrhea. A 15 per cent. solution of silver nucleinate or a 5 per cent. solution of silver nitrate, is applied to the entire length of the urethra. In the presence of a gonorrheal discharge from the cervix, hot douches of 1:8,000 potassium permanganate solution are taken four or five times daily. As soon as the discharge is well under control, which ordinarily occurs in about two weeks, local treatments to the cervical canal are given. In applying any medicated solution to the cervical canal one of the most

important points that must be observed is that the canal should be cleansed thoroughly and dried in order that the medicament may come into actual content with the infecting organisms which lie in the cervical glands. Block wipes away the major portion of the discharge and then thoroughly sprays the cervix with an alkaline solution, in order to dissolve the mucus. The cervix is again dried and then an applicator soaked in an alkaline solution (liquor antisepticus alkalinus) is passed into the canal as far as the internal os and moved to and fro, after which a dry cotton swab is passed into the canal and thin discharge removed. This process is repeated several times until all of the mucus is removed and the canal is left clean and dry. A 10 or 12.5 per cent. solution of silver nitrate is vigorously applied to the canal as far as the internal os, and immediately afterward tincture of iodin is similarly applied. Following this application the cervix and culdesac are thoroughly dried and the speculum withdrawn. Only in very exceptional cases is a tampon inserted.

Bactericidal Value of Potassium Mercuric Iodid.—The experiments reported on by Macfarlan show that potassium mercuric iodid is a powerful germicide exhibiting marked bactericidal efficiency in high dilutions. Organic matter diminishes its potency to a relatively slight degree. These facts, taken in consideration with its great solubility, its freedom from irritant action and its comparatively low toxicity in the solutions efficacious for germicidal purposes, would seem to recommend this double salt of the iodids of potassium and mercury as the most desirable of the inorganic germicides.

American Journal of Physiology, Baltimore

April 1, 1920, **51**, No. 3

*Effect of Subcutaneous Injection of Chlorid on Heat Production, Blood Pressure and Pulse Rate in Man. I. Sandiford, Rochester, Minn.—p. 407.
*Apparent Influence of Diet of Carbohydrates on Pancreas Remnant of Partially Pancreatectomized Dogs. V. W. Jensen and A. J. Carlson, Chicago.—p. 423.
Comparative Performance of Muscles Subjected to Rhythmic and Arrhythmic Stimulation. H. A. Bulger and P. G. Stiles, Boston.—p. 430.
*Renal Activity and Acid-Base Equilibrium. T. Nagayama, San Francisco.—p. 434.
Urea Excreting Activity of Kidney and Phosphate Excretion. T. Nagayama, San Francisco.—p. 449.
Gastrin Studies: Response of Stomach Mucosa of Various Animals to Gastrin Bodies. R. W. Keeton, F. C. Koch and A. B. Luckhardt. Chicago.—p. 454.
Gastrin Studies: Response of Stomach Mucosa to Food and Gastrin Bodies as Influenced by Atropin. R. W. Keeton, A. B. Luckhardt and F. C. Koch, Chicago.—p. 469.
Relation of Spinal Cord to Spontaneous Liberation of Epinephrin from Adrenals, and Action of Strychnin After Cervical Cord Section. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 484.
Relation of Catalase to Heart Activity. R. J. Seymour, Columbus, Ohio.—p. 525.
Effect of Vitamin Deficiency on Various Species of Animals. Production of Xerophthalmia in Rabbit. V. E. Nelson and A. R. Lamb, Ames, Iowa.—p. 530.
Flashing Interval of Fireflies — Its Temperature Coefficient — An Explanation of Synchronous Flashing. C. D. and A. H. Snyder, Baltimore.—p. 538.
Effect of Diminished Oxygen Rate of Nerve Conduction in Cassippea. A. G. Mayor, Washington, D. C.—p. 543.
Alkali Reserve of Blood Plasma, Spinal Fluid and Lymph. J. B. Collip and P. L. Backus, Edmonton, Canada.—p. 551.
Effect of Prolonged Hyperpnea on Carbon Dioxid Combining Power of Plasma, Carbon Dioxid Tension of Alveolar Air and Excretion of Acid and Basic Phosphate and Ammonia by Kidney. J. B. Collip and P. L. Backus, Edmonton, Canada.—p. 568.
Is The Luminescence of Cypridina an Oxidation E. Newton Harvey, Princeton, N. J.—p. 520.
*Physiologic Response to Pituitary Administration. F. S. Hammett, C. A. Patten and N. Suitsu, Philadelphia.—p. 588.

Effect of Subcutaneous Injection of Epinephrin.—Forty-six experiments are reported by Sandiford on the effect of the subcutaneous injection of epinephrin chlorid on the metabolic rate, pulse rate, and blood pressure of patients suffering from various disorders of the ductless glands. A supplementary series of twenty-seven experiments is added in which a study was made of the effect of the epinephrin injection on the pulse rate, and blood pressure (the basal metabolic rate being known). Epinephrin chlorid (0.5 c.c. of 1:1,000) injected subcutaneously invariably causes an increase in the metabolic rate. This increase is usually accompanied by an increase in the ventilation rate, respiration rate, number of heart beats each minute, volume of each beat, greater utilization of the blood carrying power and peripheral dilatation with an increased systolic and decreased diastolic blood pressure. No relationship was found between the intensity of the epinephrin reaction and the degree of hyperthyroidism and hypothyroidism. Attention is directed to the similarity of the metabolic rate curve following the injection of adrenalin to that found by Lusk from a carbohydrate plethora and to the possibility that the increased heat production is due to an excess of carbohydrate metabolites. It is suggested that in addition there may be a direct stimulation of celular combustion.

Effect of Feeding Carbohydrates on Pancreas.—In general, Jensen and Carlson's results support the view that a liberal carbohydrate diet tends to change diabetes levis into diabetes gravis, after partial pancreatectomy in dogs. But their experiments do not constitute a clear demonstration of this thesis, in fact they are not much more conclusive than the experiments reported earlier by Thiroloix, and by Allen.

Renal Activity and Acid Base Equilibrium.—The urea excreting activity of the kidney under strain was measured by Nagayama after the administration of a mixture of acid and alkaline phosphate of neutral reaction, and also after the administration of an amount of acid phosphate containing the same amount of phosphorus. A distinct decrease in function was observed after acid phosphate. Since the only essential difference in the conditions of these experiments lay in the fact that after the neutral phosphate mixture the acid base equilibrium remained unchanged, whereas after acid phosphate there was a shift toward the acid side, it is concluded that the decrease in the alkalinity of the plasma induced by an increase in the amount of acid phosphate within the body, decreases the urea excreting activity of the kidney. The administration of an amount of alkaline phosphate containing an amount of phosphorus equivalent to that given in the experiments with neutral and acid phosphates, only slightly increased the alkalinity of the plasma and had no appreciable effect on renal function. The administration of amounts of sodium bicarbonate which markedly increased in alkalinity of the plasma was accompanied by a slight decrease in the urea excreting activity of the kidney. Nagayama claims that the urea excreting activity of the kidney measured during the strain is put on the excretory capacity by the simultaneous administration of a neutral mixture of acid and alkaline phosphate.

Physiologic Response to Pituitary Ingestion.—In four out of six individuals, studied by the authors, the ingestion of the pituitary substance caused an increase in the uric acid concentration of the blood. This is interpreted as being probably due to a decreased kidney permeability brought about by the administration of the drug.

Archives of Dermatology and Syphilology, Chicago

May, 1920, **38**, No. 5

*Pathology of Congenital Syphilis. J. F. Fraser, New York.—p. 491.
Case of Myiasis Dermatosa. W. H. Mook, St. Louis.—p. 515.
*Purpura Annularis Telangiectodes (Majocchi's Disease). L. Weiss, New York.—p. 520.
Visceral Syphilis; Syphilis of Stomach. U. J. Wile, Ann Arbor, Mich.—p. 543.
Practical Method of Roentgen-Ray Dosage without Aid of Radiometer. W. D. Witherbee and J. Remer, New York.—p. 558.
Acrodermatitis Chronica Atrophicans; Report of Case. M. Scholtz, Los Angeles.—p. 565.

Congenital Syphilis.—The case reported by Fraser is one more to be added to those of apparently nonsyphilitic and immune mothers bearing children that have been proved syphilitic. From a review of antenatal pathology and embryology and the morphologic evidence in this case it would appear that infection takes place only after the fetal organs have been formed—a fact which excludes the theory of germinal transmission unless a practically unsupported theory of "larval inactivity" of the infecting organism is assumed. From the facts reviewed the most plausible explanation of the 5 per cent. residue of nonsyphilitic and immune mothers of syphilitic children is that these mothers have a mild, low grade form of syphilis.

Purpura Annularis Telangiectodes.—The cases reported by Weiss present the following deviations from the cases reported by other observers: There is very intensive, dark brown pigmentation over the middle of the legs, with whitish achromia in the center. There are almost numberless discrete lesions, with the yellowish discoloration in the area of the fading spots, which discoloration is not due to pigment deposit, but to a degeneration of the connective and elastic tissues. The evolution and the involution of the lesions and all their stages are observable simultaneously (coexistence of lesions). A slight raising above the level of the skin is present, independently of the keratotic follicles. The coil glands show evidence of a cloudy swelling and some degeneration, while the follicles are not involved. Lesions appear at the site of a biopsy, which lesions in every respect are similar to the original ones. This fact shows almost to a certainty a vasomotor trophic influence on the peripheral vessels.

Archives of Internal Medicine, Chicago

May 15, 1920, **25,** No. 5

*Experimental Pellagra in White Male Convicts. J. Goldberger and G. A. Wheeler, Washington, D. C.—p. 451.
Experimental Pulmonary Edema; Summary of the Literature. B. H. Schlomovitz, Madison.—p. 472.
Investigation of Size of Heart in Soldiers by Teleroentgen Method. A. E. Cohn, New York.—p. 499.
Teleroentgen Measurements of Hearts of Normal Soldiers. B. Smith, Los Angeles.—p. 522.
Teleroentgen Estimations of Heart Size in Cases of Effort Syndrome. B. Smith, Los Angeles.—p. 532.
Purulent Typhoid Meningitis: Report of Case. E. A. Baumgartner and H. H. Olson, Halstead, Kan.—p. 537.
*Changes in Form of Initial Ventricular Complex in Isolated Derivations of Human Electrocardiogram. F. A. Willius, Rochester, Minn.—p. 550.
*Influence of Roentgen Ray on Progress of Tuberculosis. J. A. Weinberg, Omaha.—p. 565.

Experimental Pellagra.—Goldberger and Wheeler report briefly the results of an experiment carried out at the Rankin Farm of the Mississippi Penitentiary to test the possibility of producing pellagra in previously healthy men by feeding a monotonous, principally cereal, diet. They believe that the conclusion seems warranted that pellagra developed as the result of the diet.

Electrocardiogram Studies.—The study made by Willius comprises 747 cases and covers a period of five and one-half years. The cases were divided into two major groups, cases (550) with Q R S complexes definitely notched, and cases (197) with slurring or localized thickening of the ascending or descending limb, or both. Both groups were subdivided according to derivation occurrence.

Influence of Roentgen Ray on Tuberculosis.—Weinberg attempted to hasten the progress of infection in guinea-pigs following tuberculous inoculation by exposing the animals to massive doses of the roentgen ray. In the first and second series of guinea-pigs there was no apparent difference in time of appearance of the tuberculous lesions in the roentgenized animals and the controls. In the third series, there was a difference of a few days in the time of death, the average time of death occurring two days earlier in the roentgenized animals than in the controls. This series received two roentgeon-ray exposures. The fourth series showed the same difference in time of death between the roentgenized and the control animals, as was observed in the third series. The leukocytes of the blood stream are markedly reduced in number by exposure to the roentgen ray. The reduction is proportionate to the length of exposure with a given current and voltage. The lymphocyes are most markedly affected.

Arkansas Medical Society Journal, Little Rock

April, 1920, **16,** No. 11

Some Factors in Malaria Control. H. Thibault, Scott.—p. 210.
Treatment of Syphilis. S. P. Bond, Little Rock.—p. 213.
*Voluntary Acceleration of Pulse Rate. Report of Case. C. H. Cargile, Bentonville.—p. 214.

Voluntary Acceleration of Pulse Rate.—Cargile cites the case of a woman, aged 42, who possessed the rare power of voluntarily accelerating her pulse rate to an unusual degree. She does not know how she does it, except by intense desire and mental concentration. The acceleration begins very promptly and sometimes cannot be maintained long, because it is very fatiguing. In thirty seconds the rate is increased over forty-five beats, and two minutes after the command it is about 168 beats per minute, instead of eighty-two.

California State Journal of Medicine, San Francisco

May, 1920, **18,** No. 5

Surgical Pathology of Seminal Vesicles. J. R. Dillon and F. E. Blaisdell, San Francisco.—p. 149.
Treatment of One Hundred and Thirty-Four Cases of Chronic Prostatitis. L. P. Player and C. P. Mathe, San Francisco.—p. 152.
Contracture of Bladder Neck and Other Obstructions Thereat, Exclusive of Prostatic Hypertrophy and Cancer, and Their Treatment. R. V. Day, Los Angeles.—p. 158.
The Lay Anesthetist. W. R. Crane, Los Angeles.—p. 160.
Eye Lesions Due to Focal Infections. L. W. Mansur, Los Angeles.—p. 165.
*Multiple Primary Tumors. J. C. Blair, San Jose.—p. 167.
Borderline Types of Seborrheic Dermatitis and Psoriasis. M. Schalte, Los Angeles.—p. 170.
Septic Lepto-meningitis of Otitic Origin. Report of Case with Recovery. E. C. Sewall, J. A. Bacher and H. G. Mehrtens, San Francisco.—p. 172.
*Vaccine Treatment of Typhoid. E. V. Adelung, Oakland.—p. 175.
Comparison of End Results in Intermediate and Secondary Perineorrhaphies. O. McNeile, Los Angeles.—p. 178.
*Two Cases of Ethmoidal Malignancy. P. A. Jordan, San Jose.—p. 181.
*Achylia Gastrica Treatment. E. J. Best, San Francisco.—p. 182.
Some Comparisons Between War Neuroses and Those of Civil Life. T. G. Inman, San Francisco.—p. 184.

Multiple Primary Tumors.—One of Blair's patients had a melanosarcoma of the mediastinum, with a primary carcinoma of the esophagus. In the apices of both lungs were found extensive adhesions and evidences of old consolidations. The liver was enlarged but no nodulations or tumor formations were present. There were chains of enlarged glands in both supraclavicular triangles, more marked on the right side. These glands varied in size up to 1 cm. in length and were mostly of a deep black color. Both axillae contained numerous chains of glands accompanying the vessels, those of the left axilla being much larger. On the left side of the trachea, about the level of the arch and slightly compressing it, was a large tumor mass, 3 cm. in length, and 2 cm. in diameter. This mass was without pigmentation. Esophagus: atypical squamous celled carcinoma, occupied the middle of the lower thirds of the esophagus about 10 cm. in length, extending through all the coats of the esophagus and almost obliterating the lumen, with metastases in the paravertebral glands. The remaining parts of the body were remarkably free from the metastases, a few melanosarcomas being found in the left kidney and suprarenal. The nevus was examined but did not show any carcinomatous proliferation. A second patient had a carcinoma of the ileum and an adenocarcinoma of the appendix. The third patient had a carcinoma of the stomach and gastric lymph nodes with metastases to the vertebrae and a mixed tumor of the ovary.

Intravenous Serum Therapy of Typhoid.—Adelung reports on twenty cases of typhoid treated by intravenous injections of polyvalent sensitized typhoid vaccine as prepared by F. P. Gay. The same vaccine was also used subcutaneously for the purpose of immunizing against relapse, but is not included in this report. The vaccine was given intravenously in doses varying from 75 million suspended organisms (0.25 c.c. in volume) to 525 million suspended bacilli (1.75 c.c. in volume), most commonly at two or three day intervals, though many of the intervals were much longer. The impression was gained that the vaccine is most effective when given at the shorter intervals—two or three days. But it is apparent that the proper guide is the course of the fever curve, and not any fixed rule. In this series of twenty cases, nine-one intravenous injections were given, always with Gay's vaccine. Condensed chemical reports are given.

Ethmoid Malignancy.—One of Jordan's patients had a carcinoma; the other had a sarcoma of the ethmoid.

Achylia Gastrica.—Best gives his patients 10 per cent. hydrochloric acid with instructions to take from 20 to 30 drops in a glass of water during each meal. An alkaline mouth wash is used immediately after eating. But maintains that it is physiologically correct to take the acid in this way —in sips or swallows—rather than at one time, as is usually done.

Indiana State Medical Association Journal, Fort Wayne

April 15, 1920, **13**, No. 4

*Hour-Glass Bladder. Report of Case. H. K. Bonn, Indianapolis. —p. 107.
*Résumé of Past Two Years' Prostatic Work. W. N. Wishard and H. G. Hamer, Indianapolis.—p. 111.
*Renal Tuberculosis. P. E. McCown, Indianapolis.—p. 114.
Testing Kidney Function. A. C. Yoder, Goshen.—p. 120.
Case of Epidemic Encephalitis. C. E. Gilliland, Terre Haute.—p. 132.
Case of Primary Pneumococcus Peritonitis. T. B. Noble and S. R. Edwards, Indianapolis.—p. 134.

Hour-Glass Bladder.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Prostate Work.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Renal Tuberculosis.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1391.

Journal of Laboratory and Clinical Medicine, St. Louis

April, 1920, **5**, No. 7

Respiratory Studies on Late Stages of Gas Poisoning. R. G. Pearce, Akron, O.—p. 411.
Chemical Changes in Blood in Disease, I. Nonprotein and Urea Nitrogen. C. Myers, New York.—p. 418.
*Histogenesis of Carcinoma in Islets of Pancreas. E. J. Horgan, Rochester, Minn.—p. 429.
*Effects of Heavy Metal Salts on a Protein and Reversal of Such Effects. R. A. Kehoe, Cincinnati.—p. 443.
*Tuberculosis Complement Fixation Test. B. Stivelman, Bedford Hills, N. Y.—p. 453.
Traumatic Hemolysis and Syringe Method of Blood Collection. C. E. Roderick, Battle Creek, Mich.—p. 457.

Histogenesis of Carcinoma in Pancreas.—In the microscopic examination of sections of the pancreas from the 262 cases that were selected by Horgan for this study, hypertrophy of the islets in connection with a chronic pancreatis was found in forty-eight cases. None of the patients showed glycosuria in any of the urinalyses of twenty-four hour specimens made while under observation and examination; 79.3 per cent. were found to be cases in which a gastric or duodenal ulcer was found at operation or at necropsy. In the series of 262 cases gastric ulcer was found in seventy-one; in seventeen the islets showed hypertrophy. Duodenal ulcer was found in sixty-one cases; in nineteen the islets showed hypertrophy. Gastric and duodenal ulcer were found associated in eleven cases; in two the islets showed hypertrophy. Hypertrophy of the islets was also observed in six cases of gastric carcinoma, two cases of carcinoma of the rectum, one case of carcinoma of the sigmoid, and one case of cyst of the pancreas. Hypertrophy of the islets was observed grossly and in section from all portions of the gland.

Effects of Heavy Metals on Proteins.—From his observations, Kehoe concludes that if the toxicity of the heavy metal salts is due to the coagulation of the proteins of the body, and if such coagulated proteins may be restored to their former state by the introduction into the body of proper salts and alkalies, the primary toxic effects of the heavy metal salts may be combatted intelligently.

Tuberculosis Complement Fixation Tests.—Positive fixations were obtained by Stivelman in 24 per cent. of 108 nontuberculous individuals. Of 592 serums from definitely tuberculous individuals, 310, or 52.4 per cent., gave a positive reaction, and 282, or 47.6 per cent., gave a negative reaction. Of these 282 patients, 176 had a positive sputum. Of the 294 cases, a positive reaction was obtained in 178, or 60.5 per cent., while of the 298 inactive cases, 132, or 44.3 per cent., reacted positively. Of 108 patients who had pulmonary hemorrhages subsequent to admission, forty-three had a negative fixation and sixty-five a positive fixation. Among the 700 serums tested, eleven reacted strongly positive to the Wassermann test, or an incidence of syphilis of 1.6 per cent. Four of these patients had a positive sputum and a negative tuberculosis fixation test and clinical evidence pointed to the coexistence of both diseases. Four were nontuberculous and gave a negative tuberculosis fixation. One was nontuberculous but reacted positively to the tuberculosis deviation test.

Journal of Mental and Nervous Diseases, Lancaster, Pa.

April, 1920, **51**, No. 4

*Deep Localization in the Cerebral Cortex. E. G. Van't Hoog, Amsterdam.—p. 313.
*Multiple Brain Abscesses Secondary to Bronchiectasis and Kyphoscoliosis. C. C. Saelhof, Chicago.—p. 330.

Deep Localization in Cerebral Cortex.—The results of Hoog's investigations show that the supragranular cortex layers are receptory associative, in accordance with Ariëns Kapper's functional deviation, and that the functional nature of the granules is also receptive and associative in the postcentral region. The granular cells should, moreover, be conceived of as matrix cells not only in the fascia dentata but also in the neocortex.

Multiple Brain Abscesses Secondary to Bronchiectasis.—Saelhof reports a case of multiple bilateral brain abscesses secondary to bronchiectasis caused by the wedging of the lower lobe of the right lung into a pocket formed by a hyphoscoliosis. The causative agents isolated and cultivated from both the abscesses and the suppurating lung were *B. fusiformis* and anaerobic streptococci. The infection evidently traveled through the blood stream.

Journal of Orthopedic Surgery, Lincoln, Neb.

April, 1920, **18**, No. 4

*Operative Treatment of Irreducible Paralytic Dislocation of Hip Joint. E. Jones, Los Angeles.—p. 183.
Points to Be Observed in First Ten Days of Treatment of Compound Fractures. H. Winnett, Lincoln, Neb.—p. 196.
Orthopedic Laboratory as a Solution of Brace Problem. J. E. M. Thomson, Lincoln, Neb.—p. 205.
Instrument for Tendon Fixation. G. E. Bennett, Baltimore.—p. 204.
Post-War Orthopedic Problems. E. M. Little, London.—p. 210.
Discussion of Cineplastic Amputations British Orthopaedic Association. E. Muirhead Little.—p. 212.

Operation for Irreducible Paralytic Dislocation of Hip Joint.—Jones has enlarged the acetabulum, according to Albee's method. In these cases before operation the luxation could be reduced and created at will. The operation included reefing the capsule, and was followed by plaster fixation for from three to five months. Sufficient muscle activity was present to give a good functional hip joint without ankylosis and with excellent stability.

Journal of Parasitology, Urbana, Ill.

March, 1920, **6**, No. 3

Leucochloridium Problematicum. T. B. Magath, Rochester, Minn. —p. 105.
Biologic Relationships of Ascarids. B. Schwartz, Washington, D. C. —p. 115.
Flagellate Character and Reclassification of Parasite Producing "Blackhead In Turkeys—Histomonas (Gen. Nov.) Meleagridis (Smith). E. E. Tyzzer, Boston.—p. 124.
Resistance of Ascaris Eggs. S. Yoshida, Osaka, Japan.—p. 132.
*New Bi-Flagellated Protozoon of Man. T. Wight and B. Lucke, Camp Zachary Taylor, Ky.—p. 140.
Pediculides. N. Leon, Jassy, Roumania.—p. 145.
New Species of Rhabditoid Worms Found in Human Intestines. H. Kobayashi, Seoul, Korea.—p. 148.
Spirochaeta Recurrentis: A Filter Passer. J. L. Todd, Montreal. —p. 152.
Variation of Ovum (Sarcoptes Scabiei) Under Coverglass Pressure. F. D. Weidman, Philadelphia.—p. 155.

New Protozoon of Man.—A small biflagellated protozoon was found by Wight and Lucke in the direct smears and in cultures from three postmortems of patients dead from acute influenza. They occurred, respectively, in the heart's blood, sphenoidal sinus and the lung, and apparently produced no tissue changes. The organisms were round or pear shaped, possessed two free flagella and a kinetonucleus. They were easily cultivated on rabbit's blood glycerin agar. The authors regard these organisms as accidental invaders, possibly belonging to the genus Prowazekia.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

April, 1920, **15**, No. 2

*Apparatus for Exposure of Skin or Mucous Membrane to Vapor of Toxic Substances; Observations on Dichlorethylsulphide. J. A. E. Eyster and M. E. Maver, Madison, Wis.—p. 95.
Optical Isomers. V. Tropeines. A. R. Cushny, Edinburgh.—p. 105.

*Local Anesthetic Properties of Phenyl Methyl Carbinol. A. M. Hjort and Charles E. Kaufmann, New Haven, Conn.—p. 129.
*Effect of Atropin on Chloroform Hyperglycemia. E. L. Ross, Chicago.—p. 135.
*Effect of Some Antipyretics on Acuity of Hearing. D. I. Macht, J. Greenberg and S. Isaacs, Baltimore.—p. 149.
Clotting Efficiency of Thromboplastic Agents. F. Fenger, Chicago.—p. 167.
*Iodin Absorption from Human Skin. N. C. Wetzel and T. Sollmann, Cleveland.—p. 169.
Drug Perfusion of Medulla of Turtle. 11. Aconitin, Morphin, Cocain, Quinin. A. D. Bush, University, N. D.—p. 173.

Study of Irritating Skin Vapors.—An apparatus is described by Eyster and Maver by means of which the skin or mucous membranes may be exposed to accurately controlled concentrations of toxic vapors under conditions simulating the presence of such vapors free in the atmosphere. Data are included on the skin toxicity of dichlorethylsulphid on rabbits and on man and on the toxicity of the vapors of the rabbit's eye, in order to illustrate the method of use and applicability of the apparatus. The data suggests the necessity of determinations on man when human toxicity determination is desired in the study of other irritant vapors.

Anesthetic Properties of Phenylmethyl Carbinol.—According to Hjort and Kaufmann *dl* phenylmethyl carbinol is a more potent local anesthetic on the rabbit's cornea and in the human skin than either its isomer rose oil or their homologue benzyl alcohol, but not in proportion to its greater toxic action. The relative instability of the α-phenethylol offers further objection to its practical application. It is suggested that the increased physiologic action may be due to the presence of the asymmetric carbon atom.

Effect of Atropin on Hyperglycemia.—The conclusions reached by Ross are based on the following observations: Atropin administered before chloroform anesthesia did not reduce the hyperglycemia. Atropin administered before ether or chloroform anesthesia did not alter the changes in either heart rate or respiration. Chloroform reduced heart rate while ether increased it, a fact which has been observed by others. Chloroform caused more than twice as much respiratory inhibition compared to that of ether. A two days' fast decreased chloroform hyperglycemia and did not affect ether hyperglycemia. Chloroform asphyxiates markedly more through respiratory inhibition and reduced heart rate than ether. This asphyxiation is the probable cause of a large part of chloroform hyperglycemia and the cause for its not being altered by atropin.

Effect of Antipyretics on Hearing.—The effect of a large number of antipyretic and analgesic drugs and of their combinations was studied by Macht and his associates in the relation to the acuity of sound perception. It was found that acetanilid, sodium salicylate, acetylsalicylic acid, phenyl salicylate, and some other drugs decrease the threshold of hearing. Acetphenetidin, antipyrin, pyramidon and some other drugs increase the threshold of hearing. The effects of various combinations were found to produce results which in the case of some, were addictive, while, in case of other combinations, were of a synergistic character; and the significance of these phenomena is discussed in the text.

Iodin Absorption from Skin.—The observations made by Wetzel and Sollmann indicate that the normal human skin is a very poor channel for the absorption of iodin even in the free state.

Minnesota Medicine, St. Paul

May 4, 1920, **3**, No. 5

*Surgery of Kidney. E. S. Judd, Rochester.—p. 221.
Hypertension and Its Clinical Aspects. F. J. Hirschboeck, Duluth.—p. 227.
Handling and Treatment of Dermatologic and Syphilitic Cases in Dispensary. S. E. Sweitzer, J. Butler and H. G. Irvine, Minneapolis.—p. 236.
Applications of Principles of Focal Infection With Method for Removal of Extensive Disease of Alveolar Processes. A. D. Dunn, Omaha.—p. 241.
*Treatment of Tuberculosis of Spine. H. W. Meyerding, Rochester.—p. 245.
Vaginal Drainage. F. J. Plondke, St. Paul.—p. 251.

Surgery of Kidney.—Of the 239 patients on whom nephrectomy was done in the Mayo Clinic, seven (2.9 per cent.) died. Three had tuberculosis of the kidney; one died of tuberculosis bronchopneumonia, one of miliary tuberculosis of the lungs and tuberculous peritonitis, and one of chronic nephritis and bilateral pleuritis. Two of the patients had pyonephrosis; one died of hemorrhage (forceps on pedicle) and one of thrombophlebitis of the inferior vena cava, the common, internal and external iliac veins. One patient with hypernephroma died of an infection. This patient was operated on by the transperitoneal route. One patient with carcinoma of the kidney died of acute nephritis and metastic carcinoma in the lungs.

Tuberculosis of Spine.—Of 405 patients with Pott's disease observed in the Mayo Clinic, 100 were operated on by a modified Albee bone grafting method. Meyerding states that it has been their experience that the most favorable results are obtained by a proper selection of patients to be operated on and the continuance of the conservative treatment after operation until in the judgment of the surgeon, the disease process has been arrested. The bone graft used was curved to fit the deformity. Eighty-six per cent. of the patients in the series have been relieved of clinical symptoms; three patients are unimproved; three have not been heard from; eight have died since operation.

Ohio State Medical Journal, Columbus

April 1, 1920, **16**, No. 4

Points in Abdominal Technic. J. F. Baldwin, Columbus.—p. 232.
Cases of Dislocation of Crystalline Lens. C. F. Clark, Columbus.—p. 238.
Abdominal Hysterotomy. J. D. Smith, Akron.—p. 244.
Advantages of More General Use of Local Anesthesia in Surgical Work. H. T. Sutton, Zanesville.—p. 247.
Differential Diagnosis of Tuberculosis and Syphilis. T. Zbinden, Toledo.—p. 251.
Psychiatric and Neurologic Symptoms Associated with Renal Signs. L. Miller, Toledo.—p. 255.
Comparative Anatomy of Eye. T. M. Stewart, Cincinnati.—p. 258.
Trachoma, Its Diagnosis and Treatment. R. Lockhart, Columbus.—p. 262.
Early and Late Vomiting of Pregnancy; Its Treatment. C. E. Turner, Columbus.—p. 266.

Southern Medical Journal, Birmingham, Ala.

April, 1920, **13**, No. 4

*Is Sprue Endemic in South? M. F. Boyd, Galveston.—p. 229.
Indicanuria (Toxic States), Report of Cases. W. A. Dearman, Long Beach, Miss.—p. 232.
Cardiospasm: Report of One Hundred Cases. J. R. Verbrycke, Jr., Washington, D. C.—p. 236.
*Coccidioidal Granuloma, Including First Reported Case East of Mississippi. K. M. Lynch, Charleston, S. C.—p. 246.
*Control of Malaria by Quinin Sterilization of Human Host. C. C. Bass, New Orleans.—p. 250.
Results of Recent Efforts to Control Malaria. J. A. Ferrell, New York.—p. 256.
Malaria Control in Rural Communities by Antimosquito Measures. H. H. Howard, New York.—p. 260.
Surgical Researches during World War.—G. W. Crile, Cleveland.—p. 267.
Right Sided Abdominal Pain in Female. J. N. Baker, Montgomery, Ala.—p. 271.
*Inguinal Hernia of Uterus. H. A. Royster, Raleigh, N. C.—p. 275.
Management of Tumors of Urinary Bladder. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 279.
Orbito-Palatal Route of Transilluminating Maxillary Sinus. H. H. Briggs, Asheville, N. C.—p. 284.
Maxillary Sinus in Rôle of a Reservoir for Overlying Sinus Disease. H. Dupuy, New Orleans.—p. 287.
Roentgen Ray Aid in Diagnosis of Nasal Accessory Sinus Disease. J. W. Jervey, Greenville, S. C.—p. 291.

Is Sprue Endemic in South?—Evidence is given by Boyd to substantiate the view that this infection is endemic within the Southern United States among individuals who have never been outside of the country.

Coccidioidal Granuloma.—Forty-four cases of this disease have been reported and Lynch adds one more. Forty-one patients were residents or former residents of California. One case originated in Colorado, one in Missouri; the first in the Argentine, and the forty-fifth in South Carolina. The San Joaquin Valley of California has been the source of the majority of reported cases. The author's patient was a colored woman, aged 45 years. She was born and had lived on one of the sea islands near Charleston, had come to work in Charleston as a household servant and had never been out of this region. The case was a typical one in every respect.

Control of Malaria by Quinin Sterilization.—This paper is a brief historical review of the developments and progress of

malaria control work in Bolivar and Sunflower counties, Mississippi, with which Bass has been associated.

Inguinal Hernia of Uterus.—Royster's patient was a colored woman, 45 years of age. She had been married twice but had never been pregnant. Her menses, occurring first in her fifteenth year, had always been vicarious, the flow proceeding from her nose regularly every twenty-eight days. Each month, following the discharge from her nose, she suffered from headache and pain in the epigastrium or in the thighs. About the age of 14 a lump was first noticed in her left groin, but it gave her no trouble and very little attention was paid to it until two months before admission, when she began to experience pain and discomfort. According to her impression the mass had enlarged rapidly for the previous twelve months. An incision over the mass along the groin revealed a hernial sac containing a uterus somewhat larger than normal which harbored a fibroid of the size of a billiard ball. The pedicle was composed of the well developed left tube and ovary with the broad ligament. The specimen showed complete absence of the right tube, ovary and broad ligament.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

Jan.-March, 1920, **17**, Nos. 193-195

*Medical Treatment of Infantile Paralysis. C. Mackay.—p. 1.
*Case of Leukemia with Scalp Nodules. T. H. Gunewardene.—p. 9.
Pre-Leukemia in Infancy. G. Ward.—p. 18.
*Cardiac Angina in a Child of Six Years. W. J. Rutherfurd.—p. 22.
Clinical Features of Typhus Fever in Children. A. Stroe.—p. 24.
Case of Tuberculosis Verrucosa Cutis of Foot. T. McCririck.—p. 26.
Isolated Disease of Tarsal Scaphoid: Kohler's Disease. P. M. Heath.—p. 28.
Congenital Redundant External Meatus; Repeated Abscess Formation; Excision. D. McKenzie.—p. 30.

Treatment of Infantile Paralysis.—The outstanding lines of treatment on which Mackay lays emphasis are complete anatomical rest and muscle reeducation. The treatment for any paralyzed muscles is immediate and anatomical rest. It must be immediate; it admits of no delay because the disease at once destroys muscle adjustments, and so fine are these that immediately the nerve cell governing the action of a flexor, for example, is affected, its extensor opponent begins to overact, and this must be prevented. No definite time can be stated as to when muscle reeducation should be begun, but the guides will be pyrexia, pain and tenderness; until the cessation of these the limbs are best kept at rest. The great underlying principle is to pick up a minimum function and to use it as the commencement. There is a zero position of muscle function for every muscle or muscle group; reeducation must be commenced in this position, and carried on patiently and skilfully during the next two years at least.

Leukemia with Scalp Nodules.—A boy, aged 3 years and 4 months, with an apparently idiopathic severe anemia of 11 per cent. hemoglobin and 760,000 red cells, responded, as evidenced by his general condition and blood picture, to treatment in five weeks. Then he contracted measles, and about three months later he developed nodules, mainly in the scalp, exhibiting at the same time a different blood picture, a hemoglobin percentage of 72, red cells, 5½ million, together with myeloblasts. Without treatment some of the nodules disappeared and others became smaller, but with a reduction of the red cells and the hemoglobin content. With the commencement of treatment, post hoc or propter hoc, the temperature shot up and a soft tender tumor developed. The treatment was discontinued for a fortnight, and recommenced owing to the steadily increasing anemia, but with no evidence of any improvement; eventually, with all the accompaniments of any severe anemia, death took place. Of unusual occurrences were tender hyperemic swellings in connection with the lower ends of the bones (tibiae and right femur) which subsided in a few days; the gradual enlargement of the nodules with the decline of the patient's condition, and the disappearance of some of these twenty-four hours before death.

Cardiac Angina in Child.—A boy, 6 years old, with a negative history, was found suffering from a dry pericarditis and anginoid attacks of considerable intensity Under treatment these attacks ceased.

British Medical Journal, London

May 8, 1920, **1**, No. 3097

*Treatment of Eclampsia by Transfusion of Blood. W. B. Bell.—p. 625.
Partial Pyloric Obstruction. A. E. Maylard.—p. 626.
Heart Affections in Relation to Labor Market. R. O. Moon.—p. 628.
Civil Lessons of War for Treatment of Fractures of Skull. C. M. Kennedy.—p. 630.
*Etiology of Diverticulitis. C. H. Willey.—p. 631.
*Etiologic Factors in Abortion. D. Dougal and J. W. Bride.—p. 632.

Transfusion of Blood in Eclampsia.—Bell reports a case in which 500 c.c. of blood were transfused into an eclamptic. The husband was the donor. The blood was withdrawn into citrate solution from his median basilic vein. Approximately the whole of this was transfused into the median cephalic vein of the patient. The patient made a good recovery.

Temperament and Diverticulitis.—The three patients seen by Willey were suffering from looseness of the bowels. One of these was found to be suffering from an acute kink resulting from adhesions of the sigmoid to the parietal peritoneum, and the other from a fistulous communication between the sigmoid and bladder. Willey thinks it would be illuminating to note in all cases the particular type and build and temperament of the patients, as well as any temporary condition of mental worry or powerful emotional disturbance. He has no doubt of the very close connection between depressing emotion and pathologic conditions of the large intestine, and suggests that this is the first stage in the creation of diverticulitis, a sensitive and impassioned temperament being the most powerful predisposing factor. In men of this build the effect of acute emotional worry tells at once in some way on the large intestine. The colitis of worry evidently results from diminished trophic innervation and tissue resistance, while at the same time the natural digestive ferments are faulty in quantity and quality. Food and the mucous lining become morbidly septic. The *B. colic* becomes more and more virulently active. Probably many follicles are infected, which may account for diverticuli being multiple.

Etiology of Abortion.—One hundred cases were analyzed by Dougal and Bride as to causation. Accidental or reflex causes were present in 18 per cent. General disease of the mother, disease or displacement of her genital organs, and gross abnormalities of the fetus or placenta (other than those due to hemorrhage or infarction) were found in 25 per cent. Syphilis, as represented by a positive Wassermann reaction, accounted for 12 per cent. but its influence as the actual cause of the abortion was probably much less, and nearer 8 per cent. From the remaining 52 per cent. has to be deducted the figure for the self-induced group, which is probably not less than 20 per cent. In the present series, 8 per cent of the women admitted taking lead pills, and a number of these showed clinical evidence of lead poisoning. This leaves over 30 per cent. of cases with no cause assigned. Pathologic investigation throws little additional light on the subject, as most of the morbid changes found do not produce the abortion, but occur during the operation of some other cause. It would appear, however, that the mother is primarily at fault as the result of some diseased condition, whether it be of an organic nature or an increased irritability of the centers presiding over the expulsive action of the uterus.

Dublin Journal of Medical Science

April, 1920, **4**, No. 2

*Compression Neuritis Due to Normal First Dorsal Rib. W. I. de C. Wheeler.—p. 65.
Case of Diabetes Mellitus with Local Infection and Acidosis Treated by Allen Method. H. F. Moore.—p. 72.
*Functions of Suprarenal Glands in White Rats. H. V. Exner.—p. 79.
*Approach to Median Nerve in Forearm. A. A. McConnell.—p. 90.

Compression Neuritis.—Wheeler reports one case of this type in which he removed the first rib. An incision was made above the clavicle, as if for ligature of the subclavian artery. A second limb was added, running parallel to the fibers of the trapezius muscle. The segment of rib removed extended from the posterior edge of the insertion of the scalenus medius to the scalene tubercle, so as to include

the groove for the subclavian artery, and the trunk formed by the eighth cervical and first dorsal nerves.

Function of Suprarenals.—The results of his extensive experimental work have convinced Exner that the glycogenic function of the suprarenals is dependent on, or works in conjunction with, some nervous control; this nervous control, when adequately stimulated, still being able to produce glycosuria independently, and in the absence of all suprarenal tissue. Whether the converse is true is a matter for speculation, but whatever the glycogenic function of the suprarenal glands may be, it seems to be subordinate to and dependent on the central nervous system.

Exposure of Median Nerve in Forearm.—The simplest method of reaching the plane between the superficial and deep muscular groups, where this nerve lies, according to McConnell, is to make an incision along the free border of the flexor carpi ulnaris muscle. On retracting this muscle, the interval between the flexor sublimis and flexor profundus muscles is immediately exposed. The ulnar artery and nerve are seen lying on the flexor profundus. A retractor is then inserted deep to the flexor sublimis, and the muscle is drawn anteriorly and laterally, thus exposing the median nerve in the greater part of its course in the forearm. With full flexion of the wrist the nerve lies easily accessible down to the transverse carpal ligament.

Indian Journal of Medical Research, Calcutta

October, 1919, **7**, No. 2

Pathogenesis of Deficiency Disease. V. Histopathology. R. McCarrison.—p. 269.
Id. VI. Influence of Scorbutic Diet on Bladder. R. McCarrison.—p. 279.
Id. VII. Effects of Autoclaved Rice Dietaries on Gastro-Intestinal Tract of Monkeys. R. McCarrison.—p. 283.
*Id. VIII. General Effects of Deficiency Dietaries on Monkeys. R. McCarrison.—p. 308.
*Id. IX. Occurrence of Recently Developed Cancer of Stomach in Monkey Fed on Food Deficient in Vitamins. R. McCarrison.—p. 342.
Tinturometer Instrument for Measuring Tint and Turbidity. W. F. Harvey.—p. 346.
Measurement of Bacterial Content in Fluid Suspension. W. F. Harvey.—p. 353.
Determination of Incubation Periods from Maritime Statistics, with Particular Reference to Incubation Period of Influenza. A. G. McKendrick.—p. 364.
Evidence Regarding Immunity Conferred by Attack of Influenza; Study of Three Local Epidemics. R. H. Malone.—p. 372.
Pasteurellosis in Rabbits, Following Intravenous Injection of Influenza Bacilli. R. H. Malone.—p. 379.
Report of Epizootic Disease Among Calves at Amara Dairy Farm. T. H. Gloster and G. Shanks.—p. 382.
*Value of Wassermann Test. Frequency of a Positive Wassermann Reaction in an Unselected Adult Male Indian Population. K. R. K. Iyengar.—p. 398.
*Value of Wassermann Test. II. Significance and Value of Positive Wassermann Reaction in Leprosy. K. R. K. Iyengar.—p. 407.
Prevalence of Ankylostomiasis in Madras Presidency. K. S. Mhaskar.—p. 412.
Correlation Between Chemical Composition of Anthelmintics and Their Therapeutic Values in Connection with Hookworm Inquiry in Madras Presidency. Thymol. J. F. Caius and K. S. Mhaskar.—p. 429.
Identification of Three Strains of Trypanosomes from Cases of Sleeping Sickness Contracted in Portuguese East Africa with Trypanosoma Rhodesiense. T. A. Hughes.—p. 464.
Studies in Ankylostomiasis. IV. G. T. Wrench.—p. 475.

Pathogenesis of Deficiency Disease.—Dietaries which are deficient in vitamins and in protein, and at the same time excessively rich in starch or in fat or in both, McCarrison found to be potent sources of disease and especially of gastro-intestinal disease. An excess of fat, in association with deficiency of B vitamin and protein and superabundance of starch, is peculiarly harmful to the organism. Certain dietetic deficiencies greatly favor the invasion of the blood and tissues by bacteria, especially is this the case when deficiency of vitamins and protein is associated with an excessive intake of starch. Complete absence of this vitamin from the food of the human beings is of less practical importance, from the point of view of disease production, than is its subminimal supply. Complete deprivation of B vitamin, especially in the presence of imperfect balance in other essential requisites of the food, will lead to rapid dissolution and death; subminimal supply of this vitamin will lead, in like circumstances, to slow dissolution and disease.

Cancer of Stomach and Vitamin Deficiency.—McCarrison is inclined to attribute the malignant growth in a monkey to the deficiency of certain food factors. The monkey was fed on food which contained an adequate supply of A and C vitamins but was deficient in B vitamin. The animal survived this dietetic regimen for fifty-one days. At the necropsy an obvious carcinoma of the stomach was found. The discovery of this area of carcinoma was largely a matter of chance since there was no macroscopic evidence of its presence. That the carcinoma was of recent origin seems probable since the area of pyloric mucosa involved by it was of very small size.

Value of Wassermann Test.—Twenty-two per cent. of an apparently healthy Indian male adult population tested by Iyengar, without selection, showed latent or clinically inactive syphilis as demonstrated by the Wassermann test.

Value of Wassermann Test in Leprosy.—Iyengar examined the blood serum in 100 cases of undoubted leprosy, all patients being males. Thirty-four cases were nodular, fifty-two of anesthetic, and fourteen of the mixed form of leprosy, respectively. The number of positive Wassermann reactions were for these several types 17, 16 and 8, respectively, which is 41 per cent. The author is convinced that this reaction is characteristic of leprosy in these cases and that it is not syphilitic.

Japan Medical World, Tokyo

April 3, 1920, **10**, No. 14

Maintenance of Function of Transfused Erythrocytes and Production of Antigen. K. Kobe and Y. Komiya.—p. 289.
*A New Vaccine. J. Hishikari.—p. 289.
Biological Study of Vibrios; Toxin Against Blood Corpuscles. T. Yoyoshima.—p. 289.

New Vaccine: Bacterial Solution.—Hishikari has prepared a vaccine which is not a bacterial suspension, but a solution, in which antigen may remain unaffected by the dissolution of bacteria. Ten platinum loopfuls of a twenty-four hour old culture are mixed with 10 c.c. of a 2 per cent. dried sodium carbonate solution and the mixture is allowed to stand for twenty-four hours in the incubator at 37 C. The bacteria will then dissolve in the mixture. The mixture is neutralized by adding 1 c.c. of an 8.4 or 8.7 per cent. acetic acid solution. To this neutralized solution is added urea to 0.52 per cent. In the preparation of the vaccine of putrefactive cocci and the streptococcus of elephantiasis, the cocci must be killed by keeping the suspension in the water bath at 50 C. for two hours before it is neutralized, for these will not be killed even when they are kept for twenty-tour hours at 37 C.

April 10, 1920, **10**, No. 15

Influence of Anesthetics against Phagocytosis. T. Aoyama.—p. 313.
*New Immunization Phenomenon; Volumination. R. Torikata.—p. 313.
*Schlatter-Osgood Disease. T. Shibuya.—p. 313.
Toxic Action of Immunized Serum. S. Yamada.—p. 313.
Study of B. Pertussis.—p. Takagi.—p. 314.
Frambesia in Formosa. O. Oho.—p. 314.
Excretion of Urea and Chlorate Salts from Kidney. G. Enami.—p. 314.
Treatment of Gonorrhea. S. Hidaka.—p. 314.

Volumination: New Immunization Phenomenon.—By mixing bacteria with the normal serum, the bacterial bodies will be seen to swell. By employing immune serum, instead of the normal serum the swelling will appear more remarkable. This volumination, as it is named, occurs even in the presence of so small quantity of salts as would never cause agglutination. From these facts, the swelling of the bacterial bodies may be considered to be the results of the direct combination of the antigens and antibodies.

Schlatter-Osgood Disease.—The author is inclined to attribute the cause of the disease to the incomplete ossification of the independent bone nuclei. The immediate cause of avulsion may, therefore, be disposition and stress.

Lancet, London

May 8, 1920, **1**, No. 19

Surgical Treatment of Prolapse of Uterus and Vagina. W. B. Bell.—p. 993.
*Pellagra Outbreak in Egypt. II. Pellagra Among German Prisoners of War: Food Factor in Disease. J. I. Enright.—p. 998.
Syphilis in Diseases of Heart and Circulation. C. W. Chapman.—p. 1004.

Causation of Red Degeneration. R. H. Paramore.—p. 1005.
Orbital Hemorrhage with Proptosis in Experimental Scurvy. S. S. Zilva and G. F. Still.—p. 1008.
*Very Early Case of Ileal Intussusception Following Severe Trauma in a Boy Aged Six Years. C. M. Kennedy.—p. 1008.
Case of Syphilitic Nephritis. H. B. Day.—p. 1009.
Pericardial Effusion Following Injection of Antidiphtheritic Serum. C. W. Cunnington.—p. 1009.

Pellagra: Rôle of Parotid.—In view of his findings Enright believes that the "food deficiency theory," which has been considered on apparently adequate grounds to be the cause of pellagra, is seriously threatened; that a food deficiency can be quite excluded, but it can hardly be considered as of paramount importance. Obviously something more than a dietetic factor is involved. A critical analysis of the diets which German pellagrins ate before capture and during their period of captivity prior to the onset of the eruption is sufficient to explode the food-deficiency theory as a predisposing factor. That the pellagrins suffered from defective digestive assimilation is undoubted. The incidence of malaria and dysentery was very high, and was responsible for intestinal derangement, which was a marked feature of the majority of the cases. Judging from the indicanuria commonly present and the copious foul smelling evacuations which frequently contained undigested food material, it is evident that there was abnormal protein decomposition, and that the ultimate good effects of the diet were largely vitiated or entirely lost in this manner. Enright wonders whether the parotid possesses any rôle in protein metabolism. He suggests that this gland may possess an internal secretion, the function of which is concerned in the economy of protein, just in the same manner as the pancreatic secretion is essential for normal carbohydrate metabolism.

Traumatic Intussusception.—In Kennedy's case a very early intussusception was discovered four and a half hours after a street accident. Kennedy accepts this as being direct evidence that injury may cause intussusception.

South African Medical Record, Cape Town

March 13, 1920, **18,** No. 5

Case of Eversion of Lachrymal Punctum. R. C. J. Meyer.—p. 83.
Chest Wounds at the General Hospital in France. W. Thomas.—p. 84.
Case of Carcinoma of Lungs. H. A. Loeser.—p. 89.
Tremor of Leg after Operation Cured by Hypnotism. H. Goodman.—p. 82.
Shaggy Pericarditis and Congenital Disease of Kidney. C. T. Moller.—p. 90.
Notes from Country Practice. John A. Graham.—p. 90.
A Case of Abdominal Extraperitoneal Abscess with Unusual Features. E. R. Grey.—p. 92.

March 27, 1920, **18,** No. 6

Medical Observation in South Africa. T. J. Mackie.—p. 103.
Woman's Responsibility to the Health of the Nation. G. P. Mathew.—p. 109.
Pedunculated Fibroid Obstructing Labor. W. A. Rail.—p. 111.
Enuresis Nocturna Cured by Hypnotism. H. Goodman.—p. 111.

April 10, 1920, **18,** No. 7

Some Applications of War Surgery to Civil Practice. L. Gordon.—p. 123.
*Tuberculin Treatment of Tuberculosis. D. M. Macrae.—p. 217.

Tuberculin Treatment of Tuberculosis.—Several hundred tuberculosis patients have been treated by Macrae with T. B. E. of Wright and according to Wright's technic. The patient was usually put to bed in the open air until the pyrexia—when present—had subsided. Tuberculin was then given as indicated, the dose being carefully graduated each week, having regard to the nature of the case. The injection was given subcutaneously, and absolute rest for twenty-four hours after was strictly enjoined in each case. Each week the dose was increased by $\frac{1}{10,000}$ mg. or more, according to the patient's progress, until $\frac{1}{2,500}$ mg. was reached. No ill effects were observed from the treatment of serious cases with tuberculin. In fact, Macrae found that in very early cases of pulmonary tuberculosis patients seemed to be benefited by injections of tuberculin. On the other hand, however, other patients did equally well without it; and if it be true that 95 per cent. of the human race have, at some time or other, been tuberculous, it must be equally true that most of them have recovered without any kind of treatment. In surgical tuberculosis the case was different. In all glandular affections it was found that incision, followed by tuberculin treatment, was of value.

Archives des Maladies du Coeur, etc., Paris

January, 1920, **13,** No. 1

*The Heart in Diphtheria. Aviragnet and Lutembacher.—p. 1.
Use of Condenser in Electrocardiography. D. Routier.—p. 17.
Changes in Aorta and Semilunar Valves as Factors in Dicrotic Pulse. Canciulescu.—p. 24.
*French Works During the War on Disordered Action of the Heart. P. Merklen.—p. 27.

The Heart in Diphtheria.—Aviragnet and Lutembacher call attention to the great affinity of diphtheria toxin for the heart, about the same as for nerve tissue. The intensity of diphtheric paralysis parallels the cardiac manifestations, as they are both the expression of the common intoxication. The toxin attacks the heart muscle proper as well as the more highly differentiated parts of the heart. The arrhythmia depends on the degree of the toxic impregnation, and disappears with it, but often tachycardia persists for weeks and even months.

February, 1920, **13,** No. 2

*Aneurysm of the Left Ventricle. R. Lutembacher.—p. 49.
*Sinus Arrhythmia from Asphyxia. L. Gallavardin.—p. 59.
*Sino-Auricular Block. L. Gallavardin and A. Dumas.—p. 63.
The So-Called Azurophil Granulations. L.M. Bétancès.—p. 66.

Aneurysm of the Left Ventricle.—Lutembacher states that constant pain at the apex of the heart is the only sign of value that he has been able to discover for the existence of an aneurysm of the left ventricle. It is sometimes violent but more commonly it is a dull ache or merely an uncomfortable sensation in the chest, accentuated by pressure. He gives illustrations of his three cases.

Sinus Arrhythmia from Asphyxia.—Gallavardin reports two cases from which he assumes the possibility of sinus arrhythmia with large waves for which the asphyxia is responsible, by its stimulating effect on the nuclei of the vagus. Apneic and postapneic retardation is the most characteristic form.

Sino-Auricular Block.—Gallavardin and Dumas report a case from which they conclude that abnormally low bradycardia (between 32 and 36 pulse beats) is due to sino-auricular block. Violent exertion would restore in their patient normal rhythm for the time being. As this normal episodic rhythm gave way again to the primary bradycardia, all gradations of arrhythmia characteristic of partial block could be noted. Swallowing movements restored normal rhythm to a certain extent. They could not decide in their case whether the bradycardia from sino-auricular block was the effect of a congenital predisposition or of a lesion in the sino-auricular system.

Bulletin de l'Académie de Médecine, Paris

March 9, 1920, **83,** No. 10

Sulphates of Rare Metallic Elements in Treatment of Chronic Tuberculous Processes. H. Gsenet and H. Drouin.—p. 226.
Ambidexterity. Le Dentu.—p. 229.
Arsenic and Colloidal Silver in Influenza. Capitan.—p. 234.
Functional Insufficiency of the Pulmonary Orifice with Mitral Stenosis. H. Vaquez and Magniel.—p. 236.
History of Psychopathology. Cabanès.—p. 241.

April 6, 1920, **83,** No. 14

Dual Personality. Doléris.—p. 323.
Lethargic Encephalitis. E. Jeanselme.—p. 325; C. Achard.—p. 326; A. Netter.—p. 329.
*Acidosis in Course of Acute Abdominal Disease. M. Labbé.—p. 335.
Salts of Certain Rare Metals in Therapeutics. A. Frouin.—p. 337.
Rôle of the International Hygiene Commission During the Macedonian Campaign. P. Armand-Delille and others.—p. 339.

Acidosis in Acute Abdominal Disease.—Labbé insists that tests for acidosis should be applied to all patients as a routine measure, as much as for albuminuria and glycosuria. He uses the Gerhardt, Legal or Lieben tests for diaceturia and acetonuria, and has found the results important for both diagnosis and prognosis. He ascribes the acidosis to disturbance in liver functioning secondary to the infection. It has the same import as insufficiency of the liver from other cause, but he warns that the liver may be gravely affected without acidosis developing.

April 13, 1920, **83**, No. 15

*Substitute for Bismuth. G. Hayem.—p. 344.
Lethargic Encephalitis at Lille. Combemale and Duhot.—p. 348.
Plastic Surgery of the Ear. J. Bourguet.—p. 350.
*Intermittent Parotitis. Jardet.—p. 352.
Biologic Classification of Living Beings. P. Bouquet.—p. 353.

Bismuth and Kaolin in Treatment of the Stomach.—Hayem remarks that nowadays he never meets any one that takes sodium bicarbonate systematically to relieve pain in the stomach except persons from other countries who are unacquainted with the French method of giving a single dose of 20 gm. of bismuth subnitrate in the morning, fasting. He introduced this treatment in 1906, and time has confirmed its efficacy. He has never witnessed any instance of toxic action from this large dose, but he has found kaolin very nearly as effectual as bismuth, as was described in the Paris Letter, May 29, p. 1531.

Hydroparotitis from Artificial Teeth.—Jardet calls attention to a recurring swelling and pain in the parotid gland which is liable to develop when artificial teeth are worn. If the patient has happened to take out the plate when being examined, the physician may be misled.

Bulletin Médical, Paris

April 10, 1920, **34**, No. 20

Profuse Hemorrhage from Small Blood Vessels. C. Achard.—p. 341.
Frequency of Simple Chancres and Importance of Early Bacteriologic Diagnosis. Payenneville.—p. 345.
Case of Pseudo-Hermaphrodism. H. Costantini.—p. 346.

April 17, 1920, **34**, No. 21

Use of the Pneumograph to Overcome Faulty Respiration. R. d'Heucqueville.—p. 359.
*Functional Hyperthermia in Children. H. Jumon.—p. 362.

Functional Hyperthermia in Children.—Jumon states that during childhood many so-called obscure febrile and subfebrile conditions for which a pathologic cause is sought in vain are in reality purely physiologic hyperthermia and not fever. The adult is a stabilized individual; the child, on the other hand, is an organism seeking to acquire a definite equilibrium. There are many physiologic causes that may produce a variation of temperature in children; of these causes exercise is perhaps the most important. The child is more active than the adult, and activity causes a rise of temperature. A walk of 3 miles at an ordinary gait will raise the temperature of a child, sometimes as high as 100.2 F. Hyperthermia may be of alimentary origin. A nursling, during the menses of its nurse will often have a temperature of 100.4. In early childhood the temperature falls a quarter of an hour after eating, then rises about a degree. The temperature is also influenced by the character of the food. Nervous children are naturally more subject to fluctuations of temperature than others. However, the physician should not make a diagnosis of functional hyperthermia until he has made a careful examination of the child and excluded pathologic hyperthermia of obscure origin, of which latent tuberculosis is one main cause.

Bulletins de la Société Médicale des Hôpitaux, Paris

March 5, 1920, **44**, No. 9

Epidemic Encephalitis. Sicard, Vincent and others.—p. 294, 296, 306, 310, 316, 317, 337 and 341.
Meningeal Hemorrhage of Unknown Cause Simulating Lethargic Encephalitis: Recovery. Rathery and Bonnard.—p. 300.
Induced Pneumothorax in Tuberculosis. Bernard and Baron.—p. 308.
Influence of Sex on Gravity of Influenza. Apert and Flipo.—p. 321.
Influence of Sex in Whooping Cough. E. Apert and Cambessédès.—p. 324.
Consideration of Sex in Pediatrics. E. Apert.—p. 326.
*Hemiplegia of Pleural Origin. De Jong and Jacquelin.—p. 331.
*Roentgen Raying of Spleen in Malaria. V. Cordier.—p. 346.

Pleuritic Hemiplegia.—The young man with acute left pleurisy and large effusion developed the twelfth day, four days after a simple exploratory puncture, persisting organic hemiplegia. Two similar cases are on record. Puncture earlier might have warded off the embolism presumably responsible for the hemiplegia. The effusion had collected very rapidly and this should have warned to puncture early.

Roentgen Raying of the Spleen in Malaria.—Cordier's two years of experience have confirmed the advantages sometimes to be derived in rebellious malaria from roentgen exposures of the spleen.

Lyon Chirurgical

November-December, 1919, **16**, No. 6

*Sacrolumbar Pain and Lumbar Vertebra. G. Nové-Josserand.—p. 573.
Outcome of Gunshot Wounds of the Chest. M. Barthélemy.—p. 584.
Reconstruction of Crucial Ligament of the Knee. G. Cotte.—p. 586.
Experimental Study of Chronic Gastric Ulcer. P. Santy.—p. 597.
*Decalcification of Bones. R. Tillier and P. Witas.—p. 606.
Stenosis of Duodenojejunal Flexure with Gastric Ulcer. Guérin.—p. 627.
Cubitus Valgus with Median and Ulnar Paralysis. P. Bonnet.—p. 631.
Access to Arteries in Calf. P. Bonnet.—p. 638.
*Nerves of Arterial Sheath in Causation of Eczema. R. Leriche.—p. 651.

Neuralgia from Malformation of the Fifth Lumbar Vertebra.—Nové-Josserand reports five cases in which patients complaining of pain in the sacrolumbar region were found on roentgen examination to present malformation of the fifth lumbar vertebra, an abnormal development of the transverse processes which were too long, and often too wide, crowding the fifth lumbar nerve. The fact that when the malformation is unilateral the pain radiates from the same side would seem to furnish strong proof that the malformation is the direct cause of the pain. Resection of the transverse processes does not seem irrational in treatment of this sacralization of the vertebra, causing lumbar neuralgia.

Pathogenesis of Decalcification of the Bones.—According to Tillier and Witas, decalcification of the bones is of various origin. It may be postinfectious and represent the defense reaction of the bone marrow which hypertrophies at the expense of the mineral elements of the bones. Or it may be due to faulty nutrition related in turn to some lesion of the central nervous system. It may be associated with vasoconstriction, dependent on conditions in the sympathetic nervous system. Or it may be traced to a direct local irritation of the sympathetic nerve fibers, which causes a circumscribed decalcification of the bone adjacent to the lesion, usually traumatic. The manifestations may be of a reflex character, associated with phenomena affecting primarily the muscles and of the same origin. Close relation between the decalcification and the pain may be evident. In this case the irritation of the sympathetic system has entailed neuritis.

Cure of Eczema Associated with Varicose Veins.—Leriche gives an account of a case of moist eczema of the leg associated with varicose veins which had resisted all forms of treatment for a period of five years, but which receded completely in a few days following denudation of a stretch of the femoral artery—what he calls perifemoral sympathectomy.

Nourrisson, Paris

March, 1920, **8**, No. 2

*Artificial Feeding of Infants in Institutions. A. Mola.—p. 65.
*Common Diarrhea in Infants on Cow's Milk. Marfan.—p. 81.
The Milk Supply in Paris and Suburbs. H. Martel.—p. 107.

Artificial Feeding of Infants in Institutions.—Mola reviews the work of the infant ward at Montevideo, showing that it compares favorably with similar institutions elsewhere. But even at the best, over 38 per cent. of the infants artificially fed died before reaching the sixth month; from 6 to 12 months old the mortality was 15 per cent., and from 1 to 2 years was 3.9 per cent. Institutional care of infants is pernicious at the best from the lack of psychic stimuli and the danger of secondary infection. The mortality of 19 per cent. for infants in the institution for three weeks rose to 50 per cent. with an eight months' stay. During the last six years a total of 1,026 infants have passed through the service; the total mortality has averaged 17 per cent. The rooms are spacious and there is a large court for sunning the babies and one nurse to each four. He remarks in conclusion that there is nothing more individual than the need for food; health and normal growth can be obtained with very different rations according to the subject. Sometimes the infant will begin to thrive for the first time when the amount of food is reduced to much below the normal standard. Over 64 per cent. died of the artificially fed infants weighing less than 3,000 gm., while the mortality was only 17.1 and 2.8 per cent. among those weighing 5,000 and 6,000 gm.

Diarrhea in Infants Fed on Cow's Milk.—Marfan explains that common diarrhea in infants getting cow's milk is due to exaggeration of peristalsis and hypersecretion in the bowel, a reaction to irritating substances which may be of

various origins. The intestinal flora may not have been altered before the diarrhea, but once it is installed, the flora changes and in a way that may maintain or aggravate the irritation from the products of the proteolytic, saccharolytic or lipolytic bacteria. Although these modifications of the flora are the consequences and not the cause of the diarrhea, yet it is important to keep them under control, as nutritional disturbance sets in early from the secondary defective digestion and assimilation.

Paris Médical

March 27, 1920, **10**, No. 13

*Thrombophlebitis of the Upper Extremities. F.-M. Cadenat.—p. 253.
Syndrome of the Posterior Inferior Cerebellar Artery. Duhot.—p. 259.

Thrombophlebitis of the Upper Extremities.—Cadenat states that this rare condition manifests itself by a syndrome similar to phlegmasia dolens of the lower extremities. It develops in from two to four weeks. As a rule, it terminates by a complete return to normal function, without the occurrence of embolism. Treatment is simple. First immobilization with suspension; then massage and mobilization, beginning with the third week. Phlebitis may result from a local infection of the arm, or it may be due to overstrain or to traumas of the chest that show no infection clinically. He summarizes fourteen cases, including two from his own service.

April 3, 1920, **10**, No. 14

Recent Progress in Digestive Pathology. P. Harvier.—p. 269.
Indications with Cancer of the Colon. P. Mathieu.—p. 275.
Repeated Hematemesis in Chronic Pylephlebitis. P. Carnot and J. de Léobardy.—p. 277.
Total Colectomy for Chronic Intestinal Stasis. V. Pauchet.—p. 280.
*The Sham Meal Test. Dupuy.—p. 286.
Rectitis with Secondary Syphilis. Carnot and Friedel.—p. 291.
Appearance and Reaction of the Feces. R. Goiffon.—p. 294.

The Sham Meal Test.—Dupuy discusses the sham meal test recommended by Carnot in 1904 for determination of the quality and quantity of gastric secretion. It is a clinical application of Pawlow's experimental psychical secretion. At the Beaujon hospital the appetizing sham meal usually consists of broiled steak, and bread and butter. The fasting subject is instructed to cut his food fine and to chew slowly each mouthful, but to refrain from swallowing any of the food or saliva. Each mouthful, after thorough mastication is expelled in a basin, the subject rinsing his mouth with water from time to time. The quantity of food set before the patient should require ten minutes for its mastication, as this is the minimal duration of the sham meal, since the psychic secretion reaches its height in about ten minutes. After the meal has been disposed of as described, he keeps quiet for ten minutes longer, during which period he continues to deposit in the basin all the saliva that is secreted. At the end of this time the contents of the stomach are again evacuated with the stomach tube, as was done before the sham meal. From 30 to 90 c.c. of clear gastric juice are thus secured, which contains no food particles if no saliva nor food has been allowed to reach the stomach. The gastric juice thus secured turns diamidoazobenzene red, which is evidence of the high percentage of free hydrochloric acid. Owing to its purity, its analysis is particularly easy. Dupuy has found the method of great value in the differential diagnosis of cancer, ulcer, types of dyspepsia, etc.

Presse Médicale, Paris

April 17, 1920, **28**, No. 23

*Early Diagnosis of Hard Chancre. R. Sabouraud.—p. 221.
*Autoplastic Surgical Treatment of Baldness. R. Passot.—p. 222.
*Reparative Surgery of the Hand. C. Lenormant.—p. 223.

Urgency of Early Diagnosis of Hard Chancre.—Sabouraud insists on the extreme importance of ultramicroscopic examination with every dubious ulceration on the genital organs, and reiterates that syphilis should be managed like rabies.

Operative Treatment of Baldness.—Passot utilizes strips from that part of the scalp which is not affected with calvities, twisting the flaps around to cover the bald region, as he shows in two illustrations. The growth of the hair will soon hide the edges of the long narrow pedunculated flaps, cut to cover about a third of the bald area. The result was a complete and permanent success in his six cases thus treated. By the end of a month the hair had grown enough to conceal all trace of the incisions. By the second or third month the hair had grown long enough to cover the denuded areas entirely. He remarks that this method of *chirurgie esthétique pure* ranks with the operative correction of wrinkles, surgical tattooing of scars, and reconstruction of ugly noses, French surgeons now taking much interest in correction of disfigurements.

Reparative Surgery of the Hand.—Lenormant reviews the extensive literature of the last few years on reconstruction of fingers and of the hand in general. Substitution of the thumb with a toe is giving better results, but the joints can seldom be used actively. When done on a child, the toe does not grow to keep pace with the rest of the hand. The discomfort from the position required to bring the pedunculated toe flap and the hand together also restricts the use of this method. The outcome is more promising when a finger from the other hand is used for the new thumb. Joyce reported in 1918 a successful case, the ring finger of the left hand forming the new right thumb. The hands were fastened together for two months. The man can cut with scissors and otherwise use his right hand normally. Of the nine cases of grafting a finger or toe in place of the thumb, the graft lived in all but two, and the results were excellent.

April 21, 1920, **28**, No. 24

Intranasal Treatment of Ethmoidal Suppuration. G. Portmann.—p. 233.
*The Abdominocardiac Reflex. Prével.—p. 235.

The Abdominocardiac Reflex.—Prével refers to the acceleration of the heart beat on changing from the reclining to the erect position. He has investigated this in several hundred persons, having a table for the purpose which swings the body without personal effort from the horizontal to the vertical position. There is no acceleration in the perfectly healthy, and he has traced it to the traction from sagging organs, especially the stomach, mechanically irritating the solar plexus. There is no acceleration if the stomach is supported with a band or with the hands. Tachycardia after exertion is probably due in part to the same cause, and both require treatment to restore conditions to normal, more careful mastication and refraining from drinking too much fluids with meals, while the flabby abdominal walls should be given physiologic training, and be supported with a band. By this means a damaged heart will be spared extra work and the sound heart of the athlete spared unnecessary strain.

April 24, 1920, **28**, No. 25

Transverse Fracture of the Patella. E. Juvara.—p. 241.
*Glycemia and Acetonuria. H. Chabanier.—p. 242.
*The New Laws of Inherited Syphilis. Carle.—p. 244.
Immune Bodies in Treatment of Tuberculosis. C. Spengler.—p. 244.
Trachoma. L. Cheinisse.—p. 246.

Critical Glycemia in Diabetes.—Chabanier expatiates on the light thrown on diabetes by the glycemia figure of the plasma when abrupt and intense acetonuria has been induced by sudden reduction of the carbohydrates in the diet. This will induce acetonuria even in the healthy, but the glycemia does not vary much. In the diabetic it becomes much reduced, and this reduction phase is what he calls the critical glycemia. When there is already acetonuria in the diabetic, carbohydrates should be allowed until the acetone figure is normal; then the glycemia is again the critical figure. He says that this critical glycemia is the most reliable index at our disposal of what is going on in the diabetic's organs. The normal standard is 1 per thousand and any figure above this indicates the abnormal utilization of carbohydrates which is the essence of diabetes. The size of the figure is an index of the severity of the disease and hence of the prognosis. Hyperglycemia in diabetics seems to be a kind of compensating process, like the high uremia with nephritis. The sugar content of the urine is merely a gross sign of diabetes, he affirms; it is not to be compared with the insight afforded by the critical glycemia. The test diet he has found most convenient for the purpose is the clot from 3 liters of milk, all the whey removed, but water allowed freely with it.

Progrès Médical, Paris

April 10, 1920, **35**, No. 15

*Nitrogen Equilibrium of Blood of Cancer Patients. Loeper and others.—p. 159.

The Nitrogen Balance in the Blood of Cancer Patients.—Loeper, Thinj and Tonnet report the results of their investigations on the blood of fifteen cancer patients. They found that cancer, no matter what the localization may be, affects profoundly the nitrogen equilibrium of the organism and more especially that of the blood. This fact is shown by the increase of the residual nitrogen and by the decrease of the relative amount of urea nitrogen. This result is probably due to the secretion by the tumor of proteolytic ferments resembling erepsin, and in some cases possibly by the action of the tumor on the functioning of the liver itself. They regard as especially significant the frequent increase in the amount of urea in the blood in the absence of any renal lesion diagnosticable clinically, a finding in sharp contrast with the hypo-azoturia common in cancer patients. In the fifteen cases the ratio between the urea nitrogen and the total nitrogen of the blood was always below normal; in ten cases even lower than 40 per cent., and in four cases below 20 per cent. The residual nitrogen varied around 0.60 gm., although in one case (cancer of the pylorus) the unusually high figure of 1.82 gm. was noted.

Revue de Chirurgie, Paris

July-August, 1919, **38**, No. 7-8

*Exclusion of Subarachnoid Space. F. Lemaitre.—p. 497.
Principles for Making Artificial Legs. J. Amar.—p. 539.
Surgery in Malaria. H. Alamartine and H. Vandenbosche.—p. 567.
Verticotransverse Fracture of Condyle of Femur. Bergeret.—p. 592.
*Infectious Spondylitis and Perispondylitis. Lance and Jaubert.—p. 607.

To Wall Off the Subarachnoid Space in Operating on the Brain.—Lemaitre refers particularly to operations for abscesses in the brain or cerebellum, but the simple method he has applied successfully in sixteen cases can be used for any operations on the brain. The aim is to evacuate the pus and induce adhesions along the tract of the drain to form a fibrous wall, and thus shut off all communication with the meninges. The meninges are not incised, a Pravaz needle being used to puncture down to the focus. When pus appears, the needle is replaced by a catheter. Usually pus will rise in the catheter, and the abscess will thus be partially drained. Then the catheter is removed and a drain of very small caliber is inserted in its place and worked into the puncture hole with care not to tear the edges. The drain is left in place for from twenty-four to forty-eight hours, during which time it does not act so much as a drain as it does as a foreign body designed, through a process of irritation, to develop meningeal adhesions. Then the tract leading to the collection is further enlarged by the insertion of a larger drain. By thus gradually increasing the size of the drains from day to day the meningeal orifice is widened, the area of thickening produced by the adhesions is increased, and the exclusion of the subarachnoid space is complete. Lemaitre thinks that this walling off of the subarachnoid space around marks a distinct advance in the evolution of brain surgery.

Spondylitis and Perispondylitis.—Among 150 patients whose condition had been diagnosed as Pott's disease, Lance and Jaubert found a considerable number with infectious spondylitis, so-called rheumatismal perispondylitis or tuberculous rheumatism of the Poncet type—a total of fourteen such cases from among the military hospital patients and four more from civil practice. At the height of the process the symptoms could not be controlled by any medication and the pain did not cease by mere rest in bed alone, but when the patient was provided with a plaster body cast the pain yielded rapidly. While strict immobilization is indispensable during the pain crises, it seems that later it is better for patients to be mobilized. At the beginning of the exercises the movements were stiff, but after a few seconds patients regain their suppleness. Mobilization must be carried out very gently and very prudently, as any overfatigue may bring on a new attack of pain. Eleven of the patients were treated with heliotherapy for variable periods and all were more or less benefited. The writers do not pretend that moderate mobilization together with heliotherapy can render supple spines that are already ankylosed, but state that there is no doubt that heliotherapy attenuates and arrests the pathologic process and aids in the resorption of the exudates. Otherwise the cases seemed to be passing on inevitably to ankylosis of the spine.

Schweizer Archiv f. Neurol. und Psychiatrie, Zurich

April, 1920, **6**, No. 1

*Nature of Aphasia. F. Lotmar.—p. 3. Conc'n.
*Organic Variability and Correlations. H. Bersot.—p. 37. Conc'n.
*The Problem of Instinct. R. Brun.—p. 80.
Myokymia and Muscle Changes in Scleroderma. S. Neumark.—p. 125.
Heterotopia of the Choroid Plexus. S. Kitabayashi.—p. 154.

Aphasia.—In concluding this long study of difficulty experienced in finding the proper word, Lotmar emphasizes that the difficulty is much greater for names of unseen objects than for the visible, and that this must be borne in mind, in addition to other points he describes, in training during convalescence from total aphasia.

The Plantar Reflex.—Bersot reviews the literature extensively and explains that reflex action in pathologic conditions is like that of the extremes of life, in infants and the aged. It is the relative frequency and variations that imprint the characteristic stamp, considered in connection with other reflexes.

Instinct in the Light of Modern Biology.—Brun defines the modern biologic conception of instinct and describes its physiology, psychology, and pathology, or "hormopathies." The latter, he says, may be primary morphogenic or metabolic endogenous hormopathies or secondary metabolic or dynamic exogenous hormopathies,—all outside of the consciousness and all originating in the instincts for food and for defense.

Schweizerische medizinische Wochenschrift, Basel

March 18, 1920, **50**, No. 12

Lethargic Encephalitis at Zurich. H. W. Maier.—p. 221. Cont'n.
*Vital Shape of the Erythrocytes. O. Wyss.—p. 226.
Prophylactic Raying after Operations for Cancer: Reply. M. Steiger.—p. 227.
Epidemic of Cholera in Corfu, 1916. A. E. Tsakalotos.—p. 230.

Are the Erythrocytes Biconcave?—Wyss presents evidence that the erythrocytes in the blood are round or egg shaped, the plasma exerting a counter pressure to the oxygen inside the corpuscles, which maintains them in this shape. The moment the blood issues from the vessel, this counter pressure is lost; the oxygen escapes from the erythrocytes instantaneously, and they collapse into the biconcave shape. The round or egg shape offers much less chance for friction in the circulating blood than if they were biconcave. He suggests that study of the interval before the corpuscles thus shrink to the biconcave form might have diagnostic value in some conditions.

April 8, 1920, **50**, No. 15

Character of Present Epidemic Influenza. H. Eichhorst.—p. 281.
*Incapacity from Injury of the Eyes. Sidler-Huguenin.—p. 283.
Experimental Research on Action of Drugs on the Intestines by Oral and by Parenteral Administration. F. Uhlmann and K. Zwick.—p. 287. Conc'n in No. 17.

Incapacity from Injury of the Eyes.—Sidler-Huguenin remarks that in estimating the degree of incapacity after injury of the eyes the mistake is generally made of regarding it as greater than it later proves to be. In reviewing the ultimate outcome in 300 cases in which compensation was granted he was impressed with the way in which the subject adapts himself to his impaired vision and seems to regain his old skill to a remarkable degree, as for example, a certain farmer who had lost one eye and can distinguish only fingers at 2 meters is able to manage his farm as before without any apparent detriment. When men gave up their place in the workshop on account of the injury to their eyes, it often happened that they took another similar place elsewhere, or else they founded a similar business of their own with the indemnity they had received. In none of the 300 cases has the other eye been injured later when the men continued at the same occupation. Of the total 300, fully 85 or 90 per cent. resumed their former trade or other work, testifying

that the injury to the eyes does not require a change of occupation unless it is very grave. He was allowed to examine the pay-rolls, and he found that the wages paid (1916) were the same in 81.6 per cent., and only in 8.3 per cent. were they lower. Of those who had resumed work with reduced wages, over half had regained their former wage in a year or two. Fully 90 per cent. of all by the end of two years were getting no less wages than before their accident.

Investigation of the way in which the compensation money had been spent, showed that it had laid the foundation for a competency in a number of cases, fully 80 per cent. of the injured having invested the money wisely, so that their accident had really been fortunate for them, financially. His investigations showed further that the disfigurement from the accident did not interfere with the men's getting work, and the family and friends seemed soon to get accustomed to it. Another important factor in the ultimate outcome is that a single eye gets trained in time to what amounts to stereoscopic vision as it is assisted by the sense of touch. Women become more expert in this way than men, as a rule. The experience with these 300 cases testifies abundantly that after the loss of one organ its mate learns in time to assume the functions of both. He warns that the view that every impairment of vision entitles to compensation as a matter of course is erroneous. Physicians should impress this on the injured, demonstrating to them how certain persons with defective vision even from childhood are yet able to do fine work. Otherwise the physician is liable to lay the foundation for a traumatic neurosis. He should inform the injured that any defect less than 0.75 for fine work and 0.5 for ordinary work does not entitle to indemnity. With graver injury than this, the decision must be left to specialists, but it is well to bear in mind that of the 300 cases on which this communication is based, only 10 per cent. have had their earning capacity reduced by their accident. Instead of speaking of "impairment of earning capacity" it might be better to say that the "integrity of the body is no longer quite intact." This would avoid the suggestion of damage when really such does not exist. It is probable that the experiences with accidents in other fields will yield the same ultimate results as with injury of the eyes.

Pediatria, Naples

April, 1920, **28**, No. 8

Lethargic Encephalitis in Children. P. M. Romano.—p. 353.
Meningococcus Carriers in Regiment. B. Romano.—p. 362.
Sudden Death in Pertussis. I. Nasso.—p. 365.
The Pulse-Viscosity Index in Children. A. Nizzoli.—p. 368. Cont'n.

Riforma Medica, Naples

March 6, 1920, **36**, No. 10

Lethargic Encephalitis and Influenzal Poliencephalitis. G. Zagari.—p. 245.
Histology of Mucosa with Exstrophy of Bladder. Formiggini.—p. 252.
The Law and Medical Secrecy. M. Carrara.—p. 255.

March 13, 1920, **36**, No. 11

Lethargic Encephalitis. G. Zagari.—p. 269; S. Dalmazzoni.—p. 276.
Icterohemorrhagic Spirochetosis with Necropsy. Santi Racchiusa.—p. 273.
Echinococcus Cyst in Abdominal Wall. P. de Tommasi.—p. 278.
Compensation for Injury from Violence While at Work. G. Marchese de Luna.—p. 281.

March 20, 1920, **36**, No. 12

Lethargic Encephalitis. G. Zagari.—p. 293; R. Falcone.—p. 302.
*Parenteral Injection of Milk, etc. S. Corinaldesi.—p. 296.
Maximal Fermentation of Glucose by Colon Bacillus. M. Mazzei.—p. 300.
*Physiologic Acetonuria. E. Pittarelli.—p. 303.

Protein Therapy.—Corinaldesi gave intravenous injections of 1 c.c. of a 2 or 4 per cent. solution of deutero-albumose in a case of typhoid and one of paratyphoid, according to Lüdke's technic. No benefit was apparent. Then he tried intramuscular injections of 5 or 10 c.c. of sterilized milk in five patients with lobar or bronchopneumonia or typhoid and was astonished at the prompt and permanent improvement that followed one, two or three injections, without disturbances or much local reaction. There was only rarely a slight chill and it was mild. His findings thus confirm the way in which parenteral introduction of some protein substance is able to stimulate the defensive forces and aid in the throwing off of the disease, irrespective of the nature of the protein inoculated. He remarks that the facts observed have opened new fields of research even if none of the theories advanced to date explain them satisfactorily.

Physiologic Acetonuria.—Pittarelli's research seems to disprove the assumption that every urine contains some acetone. He has further demonstrated that there must be some substance in the urine which combines with the acetone and prevents its responding to the most sensitive tests until the urine has been distilled. Then the acetone is found prominent in the distillate. The nature of this substance that masks the acetone is still a mystery.

Rivista Critica di Clinica Medica, Florence

Oct. 4, 1919, **20**, No. 40

*Return of Exophthalmic Goiter after Operation. C. Capezzuoli.—p. 469.

Recurrence of Exophthalmic Goiter After Thyroidectomy.—Only a small segment of the three lobes was left at the operation in 1915 and a complete cure followed. A year later the thyroid began to enlarge again and soon reached its former size, with other symptoms of exophthalmic goiter and also tetany. Then the young woman married and all the symptoms subsided; even the thyroid shrank to its post-operative size. She seems clinically cured, not even the shock of the death of her husband just before her child was born having brought back the symptoms.

Nov. 29, 1919, **20**, No. 48

*Pneumothoracentesis in Pleurisy. E. Riccioli.—p. 565. Conc'n.

Injection of Air in Pleurisy.—Riccioli reports six cases of pleurisy with effusion in which he allowed air to gradually take the place of the effusion as it was aspirated. This averted sudden changes in pressure while clearing out the effusion completely and holding the sheets of the pleura apart so that adhesions are less likely to develop; it also checks reproduction of the effusion, and favors the circulation in the chest.

Revista Española de Medicina y Cirugía, Barcelona

December, 1919, **2**, No. 18

Treatment for Extensive Adnexitis. J. Soler y Julia.—p. 657.
*Gangrene Following Injection of Sugar Solution with Epinephrin. Baudilio Guitera.—p. 664.
Digestive Disturbances in the Tuberculous. F. Gallart y Monés.—p. 667. To be cont'd.
Ferran's Vaccine Against Tuberculosis. J. Codina Castellvi.—p. 673.
Tuberculous Vagotonic Syndromes. R. Pla y Armengol.—p. 677.
The Unstable Temperature in Tuberculosis. Dargallo.—p. 679.

Gangrene After Injection of Sugar Solution.—The primipara of 23 with puerperal fever showed slight and sluggish response to injection of turpentine to induce a fixation abscess. The seventh day she was given an injection of 350 gm. of sugar solution containing 20 drops of epinephrin solution. The injection was made 12 cm. from the point where the turpentine had been injected five days before. This was repeated on the other thigh. Within twenty-four hours a patch of gangrene developed at the site of the injections of the sugar solution, and the processes rapidly spread and burrowed deep. When the gangrenous tissue had been cut away, the aponeurosis was left exposed but under hot applications several times a day the defect gradually healed over. Injection of sodium chlorid solution without the epinephrin was borne without by-effects, so that Baudilio inclines to ascribe the gangrene to the local vasoconstricting action of the epinephrin in the much debilitated and infected patient.

Revista Española de Obstet. y Ginecología, Madrid

September, 1919, **4**, No. 45

*Radium Treatment of Cancer of Uterine Cervix. S. Recasens.—p. 385.
*Radium Treatment of Uterine Cancer. Vital Aza.—p. 395.
Traumatisms from Coitus. V. Conill.—p. 403.

Radium Treatment of Cancer of Uterine Cervix.—Summarized April 10, 1920, p. 1054, when it appeared elsewhere.

Radium Treatment of Uterine Cancer.—Vital Aza describes the modifications in rabbit ovaries under exposure to radium and roentgen rays, and discusses the mechanism of the cure of human uterine cancer. He thinks that the proliferation of connective tissue under the influence of the raying is the result, not the cause, of the destruction of the cancer cells.

The radium and roentgen rays do not have any specific action; they merely exaggerate and hasten the degenerative processes going on, while checking mitosis.

Siglo Médico, Madrid

Feb. 7, 1920, **67**, No. 3452

Influenza. B. Hernández Briz.—p. 85.
*Differentiation of Meningitis by the Eye Findings. V. Ribon (Bogotá). —p. 86.
*History of Medicine. Albiñana.—p. 88. Cont'n.
*Acromegaly and Diabetes Insipidus. G. Pittaluga.—p. 90.

Differential Diagnosis of Meningitis by the Eye Findings.—Ribon recalls that malaria frequently induces subjective and objective changes in the eyes, some visible with the naked eye and others requiring the ophthalmoscope for their detection. Malaria may induce symptoms closely resembling those of meningitis but the meninges are sound. Hemorrhages in the retina are explained by accumulation of the hematozoa in the finer vessels. The ophthalmoscope may reveal likewise malarial neuroretinitis. The discovery of the hematozoa in the blood will permit effectual treatment of the supposed meningitis.

History of Medicine.—This instalment of Albiñana's rambling notes of his trip to France to compile data for a history of medicine is accompanied by illustrations of objects of historical interest from the Bordeaux museum. One skull shows a large trephining opening similar to those found in prehistoric skulls. But this skull is a modern one; the trephining opening was made with the prehistoric flint instruments excavated recently. It took nearly two hours to make the opening with these crude tools.

Acromegaly and Diabetes Insipidus.—Pittaluga remarks that acromegaly is probably accompanied by polyuria more often than is generally recognized, as the polyuria may be transient. The condition may right itself later as compression of part of the pituitary subsides or the parts adapt themselves functionally or anatomically to the compression.

Feb. 14, 1920, **67**, No. 3453

General Syphilis and Syphilitic Psychoses. G. R. Lafora.—p. 101. Cont'n.
Types of Infants' Stools. J. E. López-Silvero (Havana).—p. 105.
Home Treatment of Morphin Addiction. C. Juarros.—p. 107.

Feb. 21, 1920, **67**, No. 3454

*Cholecystitis and Abscess in Liver without Jaundice. E. Slocker. —p. 121.
Myiasis of the Skin. E. Hervada.—p. 124.
The Significance of Urethral Filaments. Sicilia.—p. 126.

Gallstones and Abscess in Liver Without Jaundice.—Slocker describes a case in which the symptoms from cholelithiasis were long mistaken for stomach disturbances from hyperchlorhydria. There was no jaundice, but the liver was enlarged and painful, the pain spreading to both shoulders, and the gallbladder region was tender. Over thirty gallstones were removed from the gallbladder, and recovery was soon complete after the partial cholecystectomy and incision of the liver which released fetid pus. He emphasizes the necessity for examination of the liver for a suppurating process in cases of gallbladder disease, and warns that the cystic duct may be compressed by glands in the gastrohepatic omentum; swelling of the duct from the compression may obstruct the lumen and thus entail the clinical picture of gallstone obstruction in the absence of gallstones.

Gann, Tokyo

November, 1919, **13**, No. 3

*Fowl Sarcoma. IV. T. Ogata, S. Kawakita and T. Mita.—p. 7.
*Necropsy Findings in Brain Cancer Case. M. Nagayo.—p. 9.

Fowl Sarcoma.—This report is the continuation of research on this subject since 1917. The filtered extract of the fowl sarcoma was found more virulent when prepared with distilled water than with saline, and even when sodium chlorid was added later up to a strength of 0.8 per cent. The tumor-inducing substance does not diffuse through animal membranes. These and its other properties indicate that it is a colloidal chemical substance, soluble in distilled water, and that the possibility of a filtrable virus cannot be definitely excluded.

Necropsy Findings in Cancer Case.—Illustrations are given with detailed description (in Japanese) of the necropsy findings in the cerebellum, etc., in the case of the late professor of internal medicine at the University of Tokyo, Baron Aoyama.

Deutsches Archiv für klinische Medizin, Leipzig

April 29, 1919, **129**, No. 1-2

*Ratio of Residual to Total Nitrogen. E. Becher.—p. 1.
*Retention of Indican in the Tissues. E. Becher.—p. 8.
*Bilirubin in the Blood. J. Bauer and E. Spiegel.—p. 17.
*Clinical Electrocardiography. F. Klewitz.—p. 41.
*Analysis of the Blood Gases VI. H. Straub and K. Meier.—p. 54.
*Arteriosclerosis and the Blood Pressure. K. Harpuder.—p. 74.
*Nonpuerperal Osteomalacia. H. Curschmann.—p. 93.
*Wandering Heart. Rumpf.—p. 118.

Relation Between Residual and Total Nitrogen.—Becher found the proportions between the residual nitrogen and the total nitrogen about the same in all the tissues, except that it was a trifle lower in the blood serum and in the lungs. After nephrectomy, and in persons who had succumbed to renal insufficiency, the residual nitrogen formed a larger proportion of the total nitrogen than in normal conditions.

Retention of Indican in the Tissues.—In contrast to nitrogen, Becher found no indican in the tissues when the kidneys were functioning well. But with incapacity of the kidneys, retention of indican was evident; the larger proportion was found in the blood, only very small amounts in the tissues.

Bilirubin in the Blood.—Bauer and Spiegel regard familial cholemia as a chemical sign that the liver is constitutionally below par. The bilirubin content of the blood seems to keep at a constant figure in different persons in normal conditions but, they say, it can be reduced by drugs that act on the sympathetic system, and increased by drugs that affect the vagus. Exceptionally high bilirubin content of the blood was found with obstruction of the bile passages, weakness of the myocardium, congested liver, and traumatic hemothorax. On the other hand, the bilirubin content of the blood was abnormally low with diffuse kidney disease, tuberculosis, inanition, and cachexia from cancer.

Electrocardiography in the Clinic.—Klewitz analyzes several hundred electrocardiographic curves from eighty-eight persons, including twelve with sound hearts. He found a negative T peak only in cases of organic heart disease, especially disease of the myocardium. The same can be said when the T peak is lacking, but the prognosis is not so grave as with the negative T peak. A positive T peak does not absolutely exclude organic heart disease, but the prognosis is more favorable when the electrocardiogram shows a positive or even weakly positive T peak. He found further that pressure on the vagus affected the rate of cardiac contraction both in the healthy and in those with heart disease; but a dromotropic effect was evident only with organically diseased hearts. He gives the necropsy findings in some cases in which during life the T peak had been lacking, or had been present at first and had disappeared as the condition grew worse.

Blood Gases.—Straub and Meier describe how the reaction of the blood can be determined by the curve of the binding of carbon dioxid with a known carbon dioxid pressure. They give the normal standard as deduced from fifty-six curves from forty-six persons with 320 separate determinations of the carbon dioxid capacity. The findings in one case of polycythemia suggest a buffer action by the erythrocytes.

Arteriosclerosis, Contracted Kidney and Blood Pressure.—Harpuder paid special attention to the condition of the kidneys and the blood pressure in 1,165 cases of arteriosclerosis, mostly men. The arteriosclerosis alone does not entail high blood pressure, not even when it involves the small arteries of the heart and brain, but the blood pressure runs up as the kidneys develop sclerosis of their smaller vessels. The high blood pressure seems to develop independently of the severity of any disturbance in kidney functioning or the extent of the anatomic lesion. We are justified

in assuming damaged kidneys whenever the blood pressure is over 160 mm. mercury.

Nonpuerperal Osteomalacia.—Curschmann asserts that osteomalacia may occur not only from excessive functioning of the ovaries during the puerperium, but also from excessive functioning of the thyroid gland at other periods of life. This assumption was confirmed by the success of treatment with phosphorus and cod liver oil in a number of cases described. Other cases showed that still others of the ductless glands might be involved, and that the derangement might occur with either deficient or excessive functioning of one or more. Excessive irritability of the vagus or sympathetic system may further complicate the clinical picture, as he shows by some concrete examples. In one, after a phase of hyperthyroidism, there was hypofunctioning of the thyroid, ovaries and parathyroids, manifested in the nullipara of 27 as abortive exophthalmic goiter, then myxedema, and after a few years osteomalacia and tetany. He cites in conclusion a case of neurofibromatosis which seems to be traceable likewise to weakness of the ductless glands, as there is associated nonpuerperal osteomalacia. The woman improved under phosphorus.

Movable Heart.—Rumpf describes the roentgen findings with an abnormally movable heart, and emphasizes the importance of breathing exercises to restore tone to the diaphragm, the wearing of a supporting band, and restriction of the evening meal to fluid or soft food, without meat, and with little bread, to ward off distention of the stomach.

Monatsschrift für Kinderheilkunde, Leipzig

April, 1920, **18,** No. 1

*Protein Therapy for Children. A. Czerny and H. Eliasberg.—p. 1.
*Hyperthermia with Sclerosis of Basal Ganglions. H. Mammele.—p. 5.
Capillaries of the Skin in Infants. A. Mertz.—p. 13.
*Cerebral Rachitis. P. Karger.—p. 21.

Protein Therapy Applied to Cachectic Tuberculous Children.—Czerny and Eliasberg expatiate on the transformation in the condition of certain children with advanced tuberculosis under protein therapy. They used horse serum, and obtained the best results with daily subcutaneous injection of from 0.5 to 2 c.c. Two of the twenty-six cases are reported in detail. A girl of 10, with cyanotic hands and feet, swollen legs, evidently in the demineralization stage with cachexia, almost imperceptible response to the skin tuberculin test, a large tuberculous gland in the neck and a tuberculous focus in the jaw, in three weeks began to improve under two injections weekly of 10 c.c. each of horse serum, to a total of forty-seven injections. By the end of ten months no one would have recognized the plump, rosy child. Nine of the twenty-six children died, but these were apparently doomed when the treatment was begun. The ages ranged from 3 months to 10 years. Of the nine that died all but four were under 2½ years old.

Habitual Hyperthermia with Sclerosis of the Basal Ganglions.—No cause for the constantly high temperature in the 17 months' infant could be discovered until necropsy revealed sclerotic processes in the basal ganglions. Drug tests of the sympathetic nervous system had shown that the temperature anomaly must be of central origin.

Cerebral Rachitis.—Karger states that children with rachitis are mentally backward, they sweat readily from nervous influences and show other anomalies, and the brain is usually abnormally large, although no histologic or chemical changes in it have been detected to date. If a wooden block is laid on the head of a normal infant propped up in bed, it will throw off the foreign weight with its hands or by moving its head, but the rachitic child will let it lie and at most will scream. The softness of the bones does not hinder the child from removing the block; it merely does not think of using its arms for the purpose. It does not begin to walk because it has no spontaneous interest in changing its position. Rachitic children seem to have little sense of taste; they will take cod liver oil or quinin without resistance. Laryngospasm and convulsions, he says, are the only cerebral symptoms of rachitis that have been accorded attention so far. The bending of the legs is not due exclusively to weight bearing, he explains. Even without weight bearing, the legs are drawn up in the Turkish fashion, and the strain from the muscles in time curves the soft bones. There is every reason to get rachitic children on their feet as early as possible on account of the effect on the general health and especially on the intelligence; and on their interest in their environment and to ward off hypostatic pneumonia. He noted extraordinary improvement in one case in which a rachitic child, isolated on account of an acute infection, was placed with another child isolated for the same purpose. Guarding its toys from encroachment, etc., roused dormant energies. In short, he concludes, the cerebral elements are of more moment for the development of the rachitic child than the somatic. Rachitis is not a disease of the skeleton but is a general disease. Not the rachitic bones, but the cerebrally abnormal rachitic child is what we have to treat.

Münchener medizinische Wochenschrift, Munich

Dec. 26, 1919, **66,** No. 52

Composite Picture of Young Soldier. Geigel.—p. 1491.
*Etiology of Mongolian Idiocy. W. Stoeltzner.—p. 1493.
*Luminal Poisoning with Therapeutic Doses. W. Haug.—p. 1494.
Special Bicycles for the Amputated. L. Zimmermann.—p. 1494.
Tuberculin Inunctions plus Phototherapy. Hufnagel.—p. 1495.
Composition of the Blood in Arid Climates. J. Grober.—p. 1495.
The Military Hospitals of the Foe. E. Michels.—p. 1495.

The Etiology of Mongolian Idiocy.—Stoeltzner found that in three of ten cases of mongolism the mothers during pregnancy had presented constipation, little appetite for food, striking tendency to take on fat in spite of moderate quantity of food eaten, falling out of hair, hypohidrosis, chilliness, great languor, increased need of rest and sleep, apathy and decrease of mental activity—a clear picture of hypothyroidism. Whether there is a causal connection between this syndrome and mongolism Stoeltzner is not prepared to state, but the definite proof of such a causal relation would open the way for active prophylaxis. His findings sustain Lanz' conclusions from his experimental research on the offspring of thyroidectomized animals (1905).

Eruption and Diarrhea During Luminal Treatment.—Haug prescribed in two severe cases of epilepsy 0.1 gm. of luminal three times a day, as recommended by J. Müller. Four weeks in one case, and eleven days in the other after this treatment had been begun, the patients developed high fever, diarrhea with mucous stools, bloody in the first case, and in both an eruption resembling that of scarlet fever, covering the whole body except the face and hands. The total amount taken had been 8.4 and 3.3 gm., and the first patient seemed to be severely ill, with slight stupor. The other presented albuminuria. After suspension of the drug the symptoms subsided in a few days.

Jan. 9, 1920, **67,** No. 2

Infant Feeding with Spontaneously Soured Milk. Rietschel.—p. 35.
Subcutaneous Injections. A. Falck.—p. 36.
*Pathologic Movements of Diaphragm in Paranephritis and Tuberculous Peritonitis. A. Foerster.—p. 38.
Findings with Improved Illumination for the Eye. L. Koeppe.—p. 39.
*Bone Fractures and Plaster Splints. M. von Brunn.—p. 42.
*Secretions of Prostate and Seminal Vesicles. W. Böttcher.—p. 45.
Prognostic Value and Treatment of Important Cardiac Arrhythmias. K. Grassmann.—p. 46. Conc'n.

Pathologic Excursions of the Diaphragm with Paranephritis and Tuberculous Peritonitis.—Foerster has found pathologic movements of the diaphragm, as revealed by roentgenologic examination, of value in the differential diagnosis of paranephritis and tuberculous peritonitis, especially in children. Bilaterally with the latter, and unilaterally with paranephritis, he has observed an upward displacement of the diaphragm with a flattening of the cupolas, obliteration of the phrenicocostal sinuses and marked interference with the respiratory movements. He has never noted this condition with appendicitis, cholecystitis or pyelitis.

Fractures and Plaster Splints.—Von Brunn states that while serving as expert he was astonished to note the large number of bone fractures that heal in an unsatisfactory manner. Either the setting of the fracture had been done improperly or the neighboring joints had been allowed to become stiff. In many cases it was evident that the fracture

had not even been diagnosed as such, which in this era of roentgen rays he finds inexcusable. One common source of error was that fractures of the radius were wrongly diagnosed as sprains. Even when the fracture had been correctly diagnosed, the surgeon had not persisted long enough but had stopped short of normal apposition. When the reduction of the fracture may have been satisfactory, frequently sufficient care had not been taken to make the result permanent, and the bone fragments had not healed in the position assumed when the fracture was reduced. He emphasizes that the common commercial ready-made splints do not usually fit the fracture as they should, and that the surgeon would do well to make his own. He describes in detail his method of preparing plaster splints and points out the advantages of the method.

Significance of the Secretions of the Prostate and the Seminal Vesicles.—Böttcher states that in addition to the three commonly recognized functions of the secretions of the prostate and the seminal vesicles they furnish a protective colloid that counteracts the acidity of the vaginal secretion until the spermatozoa have had time to reach the interior of the uterus.

Wiener klinische Wochenschrift, Vienna

Jan. 8, 1920, **33**, No. 2

Heliotherapy in Pulmonary Tuberculosis, and Its Relation to Immunization. H. Hayek.—p. 33.
Pulmonary Tuberculosis During the War: Statistics. A. Engel.—p. 40.
Reaction of the Tuberculous to Tonsillitis and Revaccination. O. Országh.—p. 42.
*Zinc Precipitation Treatment of Sputum. A. von Fejér and W. von Schulz.—p. 43.
Fatal Case of Dental Periostitis. O. Scheuer.—p. 44.
Leukocyte Count After Drying of Specimen. A. Reichart.—p. 45.

Examination of Tuberculous Sputums by the Zinc Precipitation Method.—Von Fejér and von Schulz had found the Ditthorn and Schultz enrichment process for tuberculous sputum superior to the Uhlenhuth process, especially when examining a large number of specimens, because of the time consumed in centrifuging with the Uhlenhuth method. But they discovered that in the Ditthorn and Schultz method the specimens, when not properly fixed by heat or if left too long in the carbofuchsin solution, take on a dark color which makes the search for tubercle bacilli impossible. They describe a modification which avoids this, and in 1,129 specimens of sputum 16.9 per cent. were positive by their modified method and only 13.8 per cent. by the Ditthorn-Schultz method. The specimen of sputum is rendered homogeneous and fluid by the usual means, and then equal quantities are poured in two sedimenting tubes. To one tube 0.5 cm. of a 20 per cent. solution of ferrous chlorid is added; to the other, 0.5 cm. of a 20 per cent. solution of either zinc acetate or zinc chlorid (the two salts are equally good). With this quantity of the reagent the resulting precipitate can be easily examined on a single slide. The tubes are allowed to stand for several hours, and when the sediment has been precipitated most of the supernatant fluid is poured off. The sediment suspended in a small quantity of the fluid is transferred to a square of filter paper several layers thick. In a few minutes, when the superfluous fluid has been absorbed, the sediment, still damp, is spread on the slide in a moderately thick layer. When it is dry, fixation over a flame follows and staining completes the process.

Hospitalstidende, Copenhagen

March 10, 1920, **63**, No. 10

Isolated Incarceration of the Appendix in Femoral and Inguinal Hernias. O. Vedel Brandt.—p. 145.

March 18, 1920, **63**, No. 11

*Clinical Training in the University. T. Rovsing.—p. 161.
*Gas Phlegmons After Injection of Stimulants. O. Thomsen.—p. 172.

Clinical Training of Medical Students at Copenhagen.—Rovsing describes the system of what he calls "volunteer service" by the medical students in the hospitals, saying that it is peculiar to the University of Copenhagen and has been in vogue there for centuries. The students now have asked to have the period for this service reduced from twelve to six months, and he argues against this, saying that the university may well be proud of this feature. He had special occasion to note its workings during the World War as the newly fledged Danish physicians serving in the various hospitals of the belligerents compared most favorably with the average from other nations.

Gas Phlegmons After Injection of Stimulants.—Thomsen relates that he knows of ten cases in which a gas phlegmon developed at the site of injection of a stimulant during the recent epidemic. In testing means for sterilizing, he found that solutions of morphin, cocain and certain other drugs passed through the Berkefeld filter without loss. After evaporating the filtrate the residue weighed the same.

Norsk Magazin for Lægevidenskaben, Christiania

May, 1920, **81**, No. 5

*Physical Standards for Young Children. C. Schiøtz.—p. 425.
*After-Treatment of Luxation of Hip Joint. V. Bülow-Hansen.—p. 460.
*Influence of Physical Exertion on the Heart. L. Dedichen.—p. 465.
*The Fat in Diabetes. H. C. Geelmuyden.—p. 479.

Standard Weight and Height Between Two and Six.—Schiøtz tabulates the findings in 513 children of this age in Norway, and compares them with similar statistics up to the age of 17, pointing out certain laws and seasons which seem to control the physical development.

After-Reduction of Congenital Dislocation of the Hip Joint.—Among the points emphasized by Bülow-Hansen in the after-care is that adduction should never be done until after pronation of about 90 degrees. Also that even when the roentgen rays show the head concentric in the acetabulum, if there is any contracture of the adductor muscles, he stretches the adductors under general anesthesia and applies a cast anew for two or three weeks, resuming then massage and exercise. In one girl of 6 the bilateral luxation was ideally corrected on one side but on the other the neck of the femur fractured and the leg was 6 cm. shorter than its mate. He advised against further intervention until the child had grown up. At 18, slanting osteotomy on the leg of normal length shortened it for nearly 6 cm. so the legs are now even.

Influence of Physical Exertion on the Heart.—Dedichen's study of 226 ski runners before and after a 50 km. race over a difficult course, and of 361 athletes traced over six years, demonstrates that neither at the time nor later was there any injurious influence on the heart when the ski athletes were at least 20 years old, healthy and in good training. The control over adequate training is possibly not quite severe enough. Hypertrophy of the heart was found later in 13.8 per cent. but nearly all the ski athletes were laborers, doing heavy work. The hospital records of 459 laborers doing heavy work showed hypertrophy of the heart in 8 per cent. and necropsy records showed up to 33 per cent. In one of the ski athletes the heart was hypertrophied, 15.1 cm. in diameter, but he refrained from the sport and from heavy work for a year, and by that time the diameter was only 13.5 cm. for weight of 68 kg., height 170 cm., and in every respect the health has kept perfect to date.

Fat Metabolism in Diabetes.—Geelmuyden's comparative study of the acute diabetes in pancreatectomized dogs and human diabetes has, he thinks, thrown light on the processes in the intermediate metabolism and their genetic connection, especially in regard to the production of sugar from fat. In research of this kind, he emphasizes, all the changes in the metabolism must be taken into account, not only the glycogen and blood sugar, the glycosuria, and the ketonuria but the migration of fat, the transformation of albumin, the total metabolism and the transformation of energy. Such studies hitherto have been restricted to only some of these elements and their interrelations have been overlooked. He shows that carbohydrates promote the formation of sugar from fat, and that the output of sugar is not increased by feeding fat unless a certain amount of carbohydrate is given with the fat. This he thinks is probably the reason why carbohydrates are so injurious in human diabetes. Diabetes in pancreatectomized dogs seems to be due to the very same anomaly in the metabolism as in human diabetes. The chief difference between them is that it occurs suddenly in the dogs while in man it is of long, slow development.